Data on Arctic Charr, *Salvelinus alpinus* (Linnaeus), Collected from Test Fisheries in the Baffin Region, Northwest Territories, 1975-79

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by

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ABSTRACT

Kristofferson, A.H., and D.K. McGowan. 1981. Data on Arctic charr, *Salvelinus alpinus* (Linnaeus), collected from test fisheries in the Baffin Region, Northwest Territories, 1975-79. Can. Data Rep. Fish. Aquat. Sci. 255: vi + 43 p.

A test fishery program was initiated by the Fishery Management Division, Department of the Environment, in 1973, in cooperation with the Wildlife Service, Government of the Northwest Territories, to facilitate the development of new commercial fisheries. Test fisheries were conducted by personnel of the Wildlife Service. This report presents a summary of the results of test fishing for Arctic charr, *Salvelinus alpinus* (Linnaeus), in the Baffin Region, Northwest Territories from 1975-79.

Key words: experimental fishing; commercial fishing; gillnets; fishery management; size distribution; age composition.

RESUME

Kristofferson, A.H., and D.K. McGowan. 1981. Data on Arctic charr, *Salvelinus alpinus* (Linnaeus), collected from test fisheries in the Baffin Region, Northwest Territories, 1975-79. Can. Data Rep. Fish. Aquat. Sci. 255: vi + 43 p.

Un programme de pêches expérimentales a été élaboré en 1973 par la division de la gestion des pêches du ministère de l'Environnement en collaboration avec le service de la faune des Territoires du Nord-Ouest dans le but de faciliter le développement de nouvelles pêches commerciales. Les pêches expérimentales ont été effectuées par le personnel du service de la faune. La publication résume les résultats d'une pêche expérimentale à l'omble chevalier (*Salvelinus alpinus* Linné) effectuée durant la période 1975-1979 dans la Région de Baffin, Territoires du Nord-Ouest.

Mots-clés: pêche expérimentale; pêche commerciale; filet maillant; gestion des pêches; distribution des tailles; distribution des âges.

INTRODUCTION

Arctic charr, *Salvelinus alpinus* (Linnaeus), have traditionally been an important food source for Inuit in the Northwest Territories (McPhail and Lindsey 1970, Scott and Crossman 1973). Commercial fishing for this species began in the late 1940's (Grainger 1953, Hunter 1966) and is becoming increasingly important. Much of the catch is exported to southern markets (Scott and Crossman 1973, Kristofferson and Carder 1980), but recently emphasis has been placed on developing markets for sale within and between settlements in the Northwest Territories. As a result, the Department of Fisheries and Oceans, Fish and Marine Mammal Management Division (FMMMD) has received requests to open new areas for commercial fishing to supply these local markets.

The larger anadromous (searun) charr, the form most sought after, is distributed in many small lakes and streams, particularly along the coast of Baffin Island (Scott and Crossman 1973). In most cases, since baseline biological data are lacking for charr stocks in these areas, assessment of these systems is a necessary step prior to commercial fishing. The Fishery Management Division (now FMMMD) started a test fishery program in 1973 to gather information necessary to determine commercial feasibility and initial quota allocations. Since then the test fisheries have been carried out by Wildlife Officers or Resource Development Officers of the Wildlife Service, Government of the Northwest Territories. These officers are based in communities throughout the north. This report summarizes results of test fisheries conducted by these officers in the Baffin region during 1975-79.

TEST FISHERY PROGRAM

Ideally, biological evaluation of water bodies should be undertaken prior to initiation of commercial fishing. Such studies are often expensive and time consuming and in many cases unwarranted, especially for small fisheries. The test fishery program described in this report is essentially a rehearsal for a new commercial fishery, designed to determine commercial feasibility and establish initial quota allocations, as well as to reveal problems that a future commercial fishery could encounter. It is by no means an intensive biological investigation or stock assessment and conclusions reached must be kept in perspective. However, under these circumstances it can function effectively as a starting point.

The most important objective of the test fishery is to determine whether the resource is present in sufficient quantity to justify establishing a commercial fishery. A measure of the relative abundance of fish is obtained by examination of catch-effort (CPE) data. CPE can be used as an index of abundance when certain assumptions are met (Ricker 1975). Generally, significant effort but poor catch suggests that, at the time the fishery took place, fish were not abundant. Significant effort and good catch suggest that the resource is present in quantity. However, if effort is light and the catch is poor, there is insufficent evidence to conclude anything about the abundance of fish. Thus, the value of the CPE data depend directly on the amount of effort expended. Fish may not be distributed uniformly throughout the water body in time and space (Ricker 1975) hence conclusions drawn based on limited effort are apt to be spurious. The provisional quota of 500 to 2500 kg often used in the test fishery program is, by design, conservative, based on comparison with known production from similar sized water bodies. It is essential that effort be made to reach this quota, including fishing all areas of the water body at different times of the year in order to gain a reasonable measure of the relative abundance of fish in the system.

Other essential information gathered during the test fishery include a measure of the status of the stock. Since selective gear (gillnets with specified minimum mesh size) is used in the fishery, only the catchable portion of the stock will be sampled. However, examination of various aspects of this part of the stock, such as length and age composition, growth rate, sex ratio, condition factor and mortality rate can provide information as to the suitability of the stock for commercial harvest. For example, if the fish are small/young and have a high annual mortality rate it is possible they have been over-harvested in the past, perhaps by a subsistence fishery, and the stock has not yet recovered. If fish are large/old and have a low annual mortality rate the stock may well be able to support a commercial fishery. Small/old fish indicate a slow growth rate, and possibly limited productivity while large/young fish suggest good growth and productivity. An uneven sex ratio may indicate that some segregation is taking place at the time of the fishery, the implications of which must be taken into consideration if a commercial fishery is to take place at that time in future. Relative condition factor (K) can be a very important statistic in assessing the stock. The condition factor is a measure of the "plumpness" or "robustness" of a fish. K less than one generally indicates fish are slinky whereas K greater than one indicates fish are in good condition. Fish are generally in poor condition after spawning or after the winter season. Campbell and Johnson (1976) report post spawning charr from Willow Lake, Northwest Territories, had a condition factor of 0.72 relative to a condition factor of 1.00 for prespawners. In other words, low condition factor can indicate that the fishery is harvesting postspawners and these fish would be of questionable market value. Such information indicates that the fishery should be conducted at a different time of year. If charr in spawning condition make up the bulk of the catch the waterbody tested is a spawning area and further fishing should be done at other locations or at different times of the year.

Initial biological data also provide an important baseline with which to compare data from the catch in years to come. Shifts in population structure could reflect the effect of exploitation and subsequent quota adjustments can be made.

Along with the collection of biological data, other factors important to the longterm survival of a commercial fishery can be explored during the test fishing phase. Problems such as inclement weather, rough ice and water conditions, transportation of fish to market, storage facilities, available market and sometimes lack of effort on the part of the fisherman, must be overcome if a commercial fishery is to survive. The test fishery program is an ideal proving ground for such problems.

In summary, the test fishery program provides a method whereby the relative abundance of fish in a waterbody can be determined, baseline biological data are gathered and problems are identified. A single year of test fishing is rarely sufficient to accomplish this. Often, time constraints or other problems hinder effort, and if sample sizes are small, inferences about the population status cannot be made with confidence. In cases such as these, it is recommended that the test fishery be repeated with special attention paid to deficiency areas.

Most test fisheries are ongoing for at least two or three years, with the permit being renewed annually. Once problems are solved and stock assessment has been undertaken, the body of water is identified as having commercial potential and is submitted as a commercial fishery to be listed in Schedule V of the Northwest Territories Fishery Regulations. As with other commercial fisheries, the water body is then opened upon annual request through a Variation Notice for a specified time and quota.

MATERIALS AND METHODS

TEST FISHING

The sequence of events outlining the test fishing procedure is listed in Appendix 1. Initiation of a test fishery usually begins with an interested community groups, such as a local Hunters and Trappers Association. This group contacts the area Wildlife/Resource Development Officer to discuss the possibility of a test fishery, the potential problems such as conflict with other groups (subsistence or sport fishing), processing, marketing, and transportation. When satisfied there is a need, the officer submits a request for a Test Fishery Permit to the Department of Fisheries and Oceans. The permit is approved by the Director of Research and Resource Services, Western Region, Winnipeg, Manitoba. A provisional quota (usually between 500 and 2500 kg, round weight) and type of gear (usually 139 mm mesh gillnet) are specified on the permit. A set of instructions is issued with the permit describing the biological sampling techniques to be used (Appendix 2). Wildlife Officers have, for the most part, received formal or on-the-job training in biological sampling. The test fishery is carried out under their supervision and, upon completion, results are sent to the FMMMD for analyses.

During most of the test fisheries documented in this report, fork length, weight and sex of charr were recorded and saggital otoliths were removed for age determination. Catch and effort data were recorded as well. In the laboratory FMMMD personnel determined ages of charr. Otoliths were ground on a fine carborundum stone to expose annual growth zones. The otoliths were then immersed in a 3:1 solution of benzyl-benzoate and methyl salicylate and examined under a dissecting microscope. Age was determined by counting the growth zones.

DATA ANALYSES

Data were analyzed using computer facilities (IBM 370-168) based at the University of Manitoba with a terminal at the Freshwater Institute, and a programmable calculator (Hewlett-Packard model 9810-A).

Annual mortality rates, defined as the number of fish which will die during the year divided by the initial number (Ricker 1958), were calculated using the method of Robson and Chapman (1961). Catch per unit of effort (CPE) was calculated as the number of fish (also the round weight of fish) caught per 24 hours per 100 metres of gillnet. The weight-length relationship was described by the equation:

$$\text{Log}_{10} W = a + b\ (\text{Log}_{10} L)$$

Where: W = weight in grams
L = fork length in millimetres,
a = Y-intercept
b = slope of the regression line

The relative condition factor (K), a measure of the "plumpness" or robustness of the fish, was determined by the formula:

$$K = \frac{W \times 10^5}{L^3}$$

Following data analyses, results were interpreted and returned with recommendations for future procedures, to the officers involved.

Locations where test fisheries took place are shown in Fig. 1. A summary of test fisheries including officers involved, dates fished, sample size and comments is given in Table 1. Results of the fisheries are shown in Tables 2-60 inclusive.

ACKNOWLEDGMENTS

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Assistance in collation of biological data was provided by Messrs. R. F. Peet,

R. W. Moshenko, and B. Wong. Mr. G. W. Carder determined the ages of fish examined. Drafting was provided by the Graphics Section, Freshwater Institute and typing by C. Vitt, K. A. Neufeld and D. Holland. Messrs. R. W. Moshenko and M. R. Falk reviewed an earlier draft of this report.

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KEY TO LAKES/RIVERS SHOWN ON FIGURE 1

	WATERBODY	COORDINATES
1.	Unnamed River (Moffet Inlet)	72-07N, 84-22W
2.	Ivisarak Lake	70-34N, 86-20W
3.	Tashirq Kikiktalik Lake	70-50N, 87-45W
4.	Ishuktok Lake	71-20N, 88-20W
5.	Magda River	71-39N, 84-37W
6.	Unnamed Lake	71-12N, 87-22W
7.	Keltie Inlet	64-35N, 73-20W
8.	Teshikalik Lake	64-25N, 82-15W
9.	Qualluatik Lake	63-45N, 65-06W
10.	Unnamed Lake	62-11N, 66-00W
11.	Unnamed Lake	62-10N, 66-05W
12.	Unnamed Lake	63-49N, 65-12W
13.	Unnamed Lake	63-55N, 65-18W
14.	Unnamed Lake	64-01N, 65-20W
15.	Unnamed Lake	63-59N, 65-34W
16.	Unnamed Lake	63-44N, 64-56W
17.	Unnamed Lake	63-40N, 64-35W
18.	Unnamed Lake	63-34N, 64-38W
19.	Hall Lake	68-41N, 82-17W
20.	Kipisa Lake	66-33N, 67-57W
21.	Avataktoo Lake	66-15N, 66-18W
22.	Ikaluit Lake	65-03N, 67-07W
23.	Iyaravung Lake	66-43N, 67-48W
24.	Opingivik Lake	65-14N, 67-22W
25.	Robertson Lake	72-05N, 81-00W
26.	Unnamed Lakes (Keel River area)	71-09N, 75-29W
27.	Unnamed Lake (Devon Island)	75-35N, 85-15W

Fig. 1. Map of the Baffin Region showing locations where test fisheries took place, 1975-79.

Table 1. Summary of test fisheries conducted in the Baffin Region, Northwest Territories, 1975-79.

Lake/River	Coordinates	Dates Fished	Wildlife Officer	Sample Size	Comments
AREA - ARCTIC BAY					
Unnamed River (Moffet Inlet)	72-07N,84-22W	Nov. 14-17, 1976	Ron Hawkins	103	Domestic fishing area for Arctic Bay.
Ivisarak Lake	70-34N,86-20W	June 7-9, 1978	Rick Letkeman	100	Test permit issued again for 1979/80.
Ivisarak Lake	70-34N,86-20W	May 24-26, 1979	Rick Letkeman	40	Only length and weight taken.
Tashirg Kikiktalik Lake	70-50N,87-45W	June 8, 1979	Rick Letkeman	Nil	Ice too thick for proper testing.
Ishuktok Lake	71-20N,88-20W	June 9-10, 1979	Rick Letkeman	5	Insufficient data.
Magda River	71-39N,84-37W	March 3-6, 1979	Rick Letkeman	102	Data analyzed results returned.
Unnamed Lake	71-12N,87-22W	June 11-13, 1979	Rick Letkeman	100	Data analyzed results returned.
AREA - CAPE DORSET					
Keltie Inlet	64-35N,73-20W	May, 1977	Ed Adams	40	Partial analysis only, all weight in dressed form.
AREA - CORAL HARBOUR					
Teshikalik Lake	64-25N,82-15W	Nov. 13-20, 1979	Glen Watts	41	Nonanadromous Arctic char.
AREA - FROBISHER BAY					
Qualluatik Lake	63-45N,65-06W	Nov. 1976	Tom Chowns	56	Presently listed in Schedule V with a quota of 1,500 lb.
Unnamed Lake	62-11N,66-00W	April 6-12, 1978	Tom Chowns	18	Small sample size.
Unnamed Lake	62-10N,66-05W	April 7-11, 1978	Tom Chowns	1	Insufficient data
Unnamed Lake	63-49N,65-12W	May 6, 1979	Tom Chowns	Nil	Lake too shallow
Unnamed Lake	63-55N,65-18W	May 7, 1979	Tom Chowns	Nil	1-75 yd net set for 24 h.
Unnamed Lake	64-01N,65-20W	May 10, 1979	Tom Chowns	Nil	1-50 yd net set for 10 h.
Unnamed Lake	63-59N,65-34W	May 10, 1979	Tom Chowns	Nil	Fished for 48 h.
Unnamed Lake	63-44N,64-56W	May 10, 1979	Tom Chowns	Nil	1-150 yd net set for 60 h.
Unnamed Lake	63-40N,64-35W	May 4, 1979	Tom Chowns	Nil	2-75 yd nets set for 16 h each.
Unnamed Lake	63-34N,64-38W	May 6, 1979	Tom Chowns	Nil	1-50 yd net set for 50 h.
AREA - IGLOOLIK					
Hall Lake	68-41N,82-17W	Aug.23-Sept.1, 1975	Sam Ransom	80	Data analyzed results returned.
Hall Lake	68-41N,82-17W	Aug.16-Sept.4, 1976	Sam Ransom	102	Data analyzed results returned.
Hall Lake	68-41N,82-17W	Aug.14-30, 1977	Sam Ransom	269	Data analyzed results returned.
AREA - PANGNIRTUNG					
Kipisa Lake	66-33N,67-57W	March 9, 1976	Robert Redhead	41	Test permit issued again for 1979/80.
Avataktoo	66-15N,66-18W	Dec. 14, 1977	Robert Hunter	99	Test permit issued again for 1979/80.
Ikaluit Lake	65-03N,67-07W	Aug. 25, 1977	Robert Hunter	51	Data analyzed results returned.
Iyaravung Lake	66-43N,67-48W	May 5, 1978	Robert Hunter	100	Data analyzed results returned.
Opingivik Lake	65-14N,67-22W	April 12, 1978	Robert Hunter	100	Test permit issued again for 1979/80.
AREA - POND INLET					
Robertson River	72-05N,81-00W	Sept. 3, 1976	Ron Hawkins	28	Sample from a domestic fishery.
Unnamed lakes (Keel River Area)	71-09N,75-29W	May 12-18, 1977	Bernie Bergman	100	A series of four lakes - all fish caught in first two lakes.
AREA - RESOLUTE BAY					
Unnamed Lake (Devon Island)	75-35N,85-15W	Sept 1, 1977	Bernie Bergman	78	Partial analysis only, all weights in dressed form.

Table 2. Test fishery results for Arctic charr from an unnamed river, Moffet Inlet (Arctic Bay area), 14-17 November, 1976.

PRODUCTION	Quota	Harvest	CATCH-EFFORT	Total number of fish	Mesh Size(cm),	Net depth (meshes)	Hours set per 100(m)	CPE[1]	CPE[2]
	Nil	452 kg		170	127	20	81.5	50.1	132.6

LENGTH-WEIGHT RELATIONSHIP $\log_{10} W = a + b (\log_{10} L)$

Sex	N	Y-intercept (a)	Slope (b)	95% C.I. of b
Male	56	-1.4022	2.7166	2.3606 - 3.0726
Female	45	-0.5766	2.2371	1.8814 - 2.5928
Total	103	-1.2097	2.6031	2.3591 - 2.8471

MORTALITY

Age-classes used	N	Survival (S)	S E of S	Annual Mortality Rate (A), where A = 1-S
14-19	33	0.54	0.06	0.46

[1]CPE = No. fish/100 m/24 h.
[2]CPE = kg rd wt/100 m/24 h.

Table 3. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by length interval for Arctic charr taken from an unnamed river, Moffet Inlet (Arctic Bay area), 14-17 November, 1976.

Length Interval (cm)	Males							Females							Combined							%
			Length(cm)		Weight(g)					Length(cm)		Weight(g)					Length(cm)		Weight(g)			
	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	Female
45.0-49.9	-	-	-	-	-	-	-	3	6.7	48.0	-	1487	115	1.35	3	2.9	48.0	-	1487	115	1.35	-
50.0-54.9	8	14.3	51.9	-	1772	209	1.27	10	22.2	52.0	-	1814	151	1.30	18	17.5	51.9	-	1795	175	1.28	56
55.0-59.9	14	25.0	56.5	-	2292	286	1.27	18	40.0	56.8	-	2283	359	1.24	33	32.0	56.7	-	2276	325	1.25	55
60.0-64.9	17	30.4	61.7	-	3015	587	1.28	9	20.0	61.8	-	2759	278	1.17	26	25.2	61.8	-	2927	510	1.24	35
65.0-69.9	12	21.4	67.6	-	3786	578	1.22	5	11.1	66.4	-	3062	321	1.05	18	17.5	67.2	-	3534	614	1.16	28
70.0-74.9	4	7.1	72.5	-	4168	610	1.10	-	-	-	-	-	-	-	4	3.9	72.5	-	4168	610	1.10	-
75.0-79.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80.0-84.9	1	1.8	81.0	-	5997	-	1.11	-	-	-	-	-	-	-	1	1.0	81.0	-	5897	-	1.11	-
Total	56							45							103							44
Mean			61.4	6.7	2956	971	1.25			57.2	5.3	2307	535	1.22			59.6	6.4	2662	861	1.23	

Table 4. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by age group for Arctic charr taken from an unnamed river, Moffet Inlet (Arctic Bay area), 14-17 November, 1976.

Age (yr)	Males							Females							Combined							%
			Length(cm)		Weight (g)					Length(cm)		Weight(g)					Length(cm)		Weight(g)			
	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	Female
9	-	-	-	-	-	-	-	3	8.8	50.7	4.0	1839	503	1.39	3	3.8	50.7	4.0	1839	503	1.39	-
10	2	4.5	54.5	3.5	1928	481	1.18	2	5.9	55.5	7.8	2155	482	1.28	4	5.1	55.0	5.0	2041	414	1.23	50
11	4	9.1	54.8	3.3	2240	234	1.37	3	8.8	53.0	7.8	1815	600	1.21	7	8.9	54.0	5.2	2057	446	1.30	43
12	6	13.6	56.3	5.0	2047	351	1.16	7	20.6	58.6	5.8	2462	698	1.21	13	16.5	57.5	5.4	2271	584	1.19	54
13	11	25.0	63.5	3.3	3165	756	1.22	7	20.6	56.4	4.4	2268	556	1.25	19	24.1	60.5	5.0	2769	808	1.22	37
14	7	15.9	64.2	7.1	3180	915	1.18	3	8.8	56.7	3.2	2495	454	1.36	10	12.7	62.0	7.0	2975	845	1.24	30
15	8	18.2	59.6	6.2	2736	693	1.28	6	17.6	60.7	4.7	2438	469	1.09	14	17.7	60.1	5.4	2608	605	1.20	43
16	4	9.1	60.3	3.8	3175	888	1.43	2	5.9	54.5	6.4	2155	482	1.33	6	7.6	58.3	5.1	2835	893	1.40	33
17	2	4.5	62.0	9.9	2835	1444	1.13	-	-	-	-	-	-	-	2	2.5	62.0	9.9	2835	1444	1.13	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	1	2.9	68.0	-	3175	-	1.01	1	1.3	68.0	-	3175	-	1.01	-
Total	44							34							79							43
Mean			60.3	5.9	2783	818	1.24			57.0	5.8	2293	566	1.23			58.9	6.0	2561	754	1.24	
Mean Age		13.5							12.9							13.2						

Table 5. Test fishery results for Arctic charr from Ivisarak Lake (Arctic Bay area), 7-9 June, 1978.

PRODUCTION	Quota	Harvest	CATCH-EFFORT	Total number of fish	Mesh Size(mm)	Net depth (meshes)	Hours set per 100 (m)	CPE[1]	CPE[2]
	1364 kg	545.5 kg		155	139	25	147	25.3	891

LENGTH-WEIGHT RELATIONSHIP $\log_{10} W = a + b (\log_{10} L)$

Sex	N	Y-intercept (a)	Slope (b)	95% C.I. of b
Male	50	-2.1488	3.0906	2.8372 - 3.3440
Female	50	-0.2708	2.0661	1.6510 - 2.4812
Total	100	-1.6888	2.8389	2.5976 - 3.0802

MORTALITY

insufficient data

[1]CPE = No. fish/100 m/24 h.
[2]CPE = kg rd wt/100 m/24 h.

Table 6. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by length interval for Arctic charr taken from Ivisarak Lake (Arctic Bay area), 7-9 June, 1978.

Length Interval (cm)	Males							Females							Combined							% Female
	N	%	Length(cm) Mean	SD	Weight (g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	
60.0-64.9	5	10.0	63.2	-	2631	294	1.04	8	16.0	62.9	-	2707	238	1.09	13	13.0	63.0	-	2678	252	1.07	62
65.0-69.9	5	10.0	67.7	-	3243	373	1.04	12	24.0	67.7	-	3345	224	1.08	17	17.0	67.7	-	3315	268	1.07	71
70.0-74.9	8	16.0	72.3	-	3941	448	1.04	12	24.0	72.8	-	3902	601	1.01	20	20.0	72.6	-	3918	532	1.02	60
75.0-79.9	7	14.0	78.4	-	5118	619	1.06	16	32.0	77.0	-	4125	569	0.91	23	23.0	77.4	-	4427	737	0.95	70
80.0-84.9	21	42.0	82.5	-	6053	589	1.08	2	4.0	81.0	-	5160	561	0.98	23	23.0	82.3	-	5976	629	1.07	9
85.0-98.9	4	8.0	85.9	-	6322	298	1.00	-	-	-	-	-	-	-	4	4.0	85.9	-	6322	298	1.00	-
Total	50							50							100							50
Mean			77.2	7.3	4983	1390	1.06			71.7	5.6	3699	744	1.00			74.4	7.0	4341	1283	1.03	

Table 7. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by age group for Arctic charr taken from Ivisarak Lake (Arctic Bay area), 7-9 June, 1978.

Age (yr)	Males							Females							Combined							% Female
	N	%	Length(cm) Mean	SD	Weight (g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	
14	2	5.4	68.7	2.3	3288	2	1.02	1	3.4	60.9	-	2495	-	1.11	3	4.5	66.1	4.8	3023	458	1.05	33
15	2	5.4	64.9	0.5	2835	321	1.04	2	6.9	63.5	3.4	2778	240	1.09	4	6.1	64.2	2.1	2807	234	1.06	50
16	3	8.1	75.2	5.9	4385	1136	1.02	2	6.9	62.0	1.3	2552	80	1.07	5	7.6	69.9	8.4	3651	1287	1.04	40
17	3	8.1	67.0	4.2	3175	589	1.05	8	27.6	66.8	2.1	3288	284	1.10	11	16.7	66.9	2.6	3258	359	1.09	73
18	3	8.1	67.4	4.2	3062	708	0.99	1	3.4	66.2	-	3062	-	1.06	4	6.1	67.1	3.5	3062	578	1.00	25
19	3	8.1	71.2	8.6	3966	1223	1.08	4	13.8	72.1	7.7	3884	749	1.04	7	10.6	71.7	7.4	3919	884	1.06	57
20	3	8.1	71.1	6.2	3931	1054	1.08	1	3.4	79.7	-	3515	-	0.69	4	6.1	73.2	6.7	3827	885	0.98	25
21	5	13.5	81.6	2.2	6237	876	1.14	2	6.9	76.0	5.7	4536	1444	1.01	7	10.6	80.0	4.0	5751	1245	1.10	29
22	5	13.5	82.9	1.9	6010	227	1.06	3	10.3	74.0	2.0	4271	951	1.05	8	12.1	79.6	5.0	5358	1048	1.06	38
23	-	-	-	-	-	-	-	2	6.9	74.0	5.3	3743	161	0.94	2	3.0	74.0	5.3	3743	161	0.94	-
24	4	10.8	80.3	5.0	5472	950	1.05	2	6.9	78.3	2.3	4706	561	0.98	6	9.1	79.6	4.1	5216	873	1.03	33
25	2	5.4	81.6	4.3	5500	1042	1.01	1	3.4	68.6	-	3402	-	1.05	3	4.5	77.2	8.1	4801	1416	1.02	33
26	2	5.4	83.4	1.2	6010	161	1.04	-	-	-	-	-	-	-	2	3.0	83.4	1.2	6010	161	1.04	-
Total	37							29							66							44
Mean			75.6	7.6	4701	1432	1.05			69.9	6.2	3578	809	1.04			73.1	7.6	4208	1317	1.05	
Mean Age		20.0							19.1							19.6						

Table 8. Test fishery results for Arctic charr from Ivisarak Lake (Arctic Bay area), 24-26 May, 1979.

PRODUCTION		Quota			Harvest	
		1364 kg			141.4 kg	
CATCH-EFFORT	Total number of Fish	Mesh Size (mm)	Net Depth (meshes)	Hours set per 100(m)	CPE[1]	CPE[2]
	40	139	25	27.3	45.5	160.8

LENGTH-WEIGHT RELATIONSHIP $\log_{10} W = a + b (\log_{10} L)$

Males & Females	N	Y-intercept	Slope	95% C.I. of b
Total	40	-1.4772	2.7228	2.4142 - 3.0314

MORTALITY Insufficient data

[1]CPE = No. fish/100 m/24 h.

[2]CPE - kg rd wt/100 m/24 h.

Table 9. Length composition of Arctic charr from the test fishery at Ivisarak Lake (Arctic Bay area), 24-26 May, 1979.

Length Interval (cm)	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K
45.0-49.9	1	2.5	48.5	-	1140	-	1.00
50.0-54.9	-	-	-	-	-	-	-
55.0-59.9	5	12.5	57.4	-	2086	103	1.10
60.0-64.9	3	7.5	63.7	-	2647	127	1.03
65.0-69.9	12	30.0	66.7	-	3162	457	1.06
70.0-74.9	7	17.5	71.4	-	3893	304	1.07
75.0-79.9	10	25.0	76.8	-	4450	662	0.98
80.0-84.9	-	-	-	-	-	-	-
85.0-89.9	2	5.0	86.8	-	6125	1605	0.93
Total	40						
Mean			69.2	8.1	3536	1159	1.04

Table 10. Test fishery results for Arctic charr from Magda River (Arctic Bay area), 3-6 March, 1979.

PRODUCTION	Quota	Harvest	CATCH-EFFORT	Total number of fish	Mesh Size(mm)	Net depth (meshes)	Hours set per 100(m)	CPE[1]	CPE[2]
	1,814 kg	344.2 kg		122	139	25	80.5	36.4	102.0

LENGTH-WEIGHT RELATIONSHIP $\log_{10} W = a + b (\log_{10} L)$

Sex	N	Y-intercept (a)	Slope (b)	95% C.I. of b
Male	55	-1.3733	2.6641	2.3924 - 2.9358
Female	47	-0.6671	2.2664	1.6388 - 2.8940
Total	102	-1.2227	2.5782	2.3059 - 2.8505

MORTALITY

Age-classes used	N	Survival (S)	S E of S	Annual Mortality Rate (A), where A = 1-S
14-25	26	0.61	0.06	0.39

[1]CPE = No. fish/100 m/24 h.
[2]CPE = kg rd wt/100 m/24 h.

Table 11. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by length interval for Arctic charr taken from Magda River (Arctic Bay area), 3-6 March, 1979.

Length Interval (cm)	Males							Females							Combined							% Female
	N	%	Length(cm) Mean	SD	Weight (g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	
50.0-54.9	1	1.8	54.5	-	2041	-	1.26	1	2.1	54.1	-	1814	-	1.15	2	2.0	54.3	-	1928	161	1.20	50
55.0-59.9	16	29.1	57.7	-	2041	185	1.06	10	21.3	58.2	-	2075	347	1.06	26	25.5	57.9	-	2054	253	1.06	39
60.0-64.9	10	18.2	62.1	-	2518	213	1.05	18	38.3	62.7	-	2652	316	1.07	28	27.5	62.5	-	2604	287	1.06	64
65.0-69.9	14	25.5	67.4	-	3305	402	1.08	15	31.9	66.4	-	2918	380	1.00	29	28.4	66.9	-	3105	431	1.04	52
70.0-74.9	7	12.7	71.8	-	3856	571	1.04	3	6.4	72.3	-	3515	631	0.93	10	9.8	72.0	-	3754	577	1.01	30
75.0-79.9	7	12.7	77.0	-	4277	531	0.94	-	-	-	-	-	-	-	7	6.9	77.0	-	4277	531	0.93	-
Total	55							47							102							46
Mean			65.2	6.8	2965	886	1.05			63.4	4.3	2652	530	1.04			64.3	5.8	2821	737	1.04	

Table 12. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by age group for Arctic charr taken from Magda River (Arctic Bay area), 3-6 March, 1979.

Age (yr)	Males							Females							Combined							% Female
	N	%	Length(cm) Mean	SD	Weight (g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	
9	1	2.2	54.5	-	2041	-	1.26	-	-	-	-	-	-	-	1	1.3	54.5	-	2041	-	1.26	-
10	6	13.0	56.9	1.4	1966	93	1.07	1	2.9	59.4	-	1247	-	0.60	7	8.8	57.3	1.6	1863	284	1.00	14
11	6	13.0	59.4	1.7	2192	211	1.04	2	5.9	55.7	2.2	1871	81	1.09	8	10.0	58.5	2.4	2112	234	1.05	25
12	9	19.6	63.5	6.9	2823	939	1.07	6	17.6	61.3	3.6	2646	563	1.13	15	18.8	62.6	5.8	2752	791	1.10	40
13	12	26.1	67.1	4.7	3308	665	1.09	11	32.4	62.5	3.3	2598	398	1.06	23	28.8	64.9	4.6	2968	651	1.07	48
14	4	8.7	71.3	5.5	3998	1028	1.09	4	11.8	63.7	2.3	2722	359	1.06	8	10.0	67.5	5.6	3360	987	1.07	50
15	1	2.2	70.1	-	3175	-	0.92	5	14.7	65.0	2.4	2721	289	0.99	6	7.5	65.9	3.0	2797	318	1.00	83
16	3	6.5	69.5	2.3	3440	624	1.02	3	8.8	62.0	2.0	2797	173	1.17	6	7.5	65.8	4.5	3119	540	1.10	50
17	3	6.5	66.1	9.5	2722	969	0.92	1	2.9	73.2	-	2835	-	0.72	4	5.0	67.9	8.5	2750	793	0.87	25
18	1	2.2	76.2	-	4082	-	0.92	-	-	-	-	-	-	-	1	1.3	76.2	-	4082	-	0.92	-
25	-	-	-	-	-	-	-	1	2.9	67.7	-	2608	-	0.84	1	1.3	67.7	-	2608	-	0.84	-
Total	46							34							80							43
Mean			64.5	6.8	2909	898	1.06			62.7	4.0	2581	466	1.04			63.8	5.8	2770	759	1.05	
Mean Age		12.8							13.8							13.2						

Table 13. Test fishery results for Arctic charr from an unnamed lake (Arctic Bay area), 11-13 June, 1979.

PRODUCTION	Quota	Harvest	CATCH-EFFORT	Total number of fish	Mesh Size(cm)	Net depth (meshes)	Hours set per 100(a)	CPE[1]	CPE[2]
	Nil	307.6 kg		142	139	25	33.4	102.0	221.0

LENGTH-WEIGHT RELATIONSHIP $\log_{10} W = a + b (\log_{10} L)$

Sex	N	Y-intercept (a)	Slope (b)	95% C.I. of b
Male	58	-2.3082	3.1351	2.7074 - 3.5628
Female	42	-2.7316	3.3907	3.1059 - 3.6755
Total	100	-2.4106	3.2001	2.9203 - 3.4799

MORTALITY

insufficient data

[1]CPE = No. fish/100 m/24 h.
[2]CPE = kg rd wt/100 m/24 h.

Table 14. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by length interval for Arctic charr taken from an unnamed lake (Arctic Bay area), 11-13 June, 1979.

Length Interval (cm)	Males							Females							Combined						
	N	%	Length(cm) Mean	SD	Weight (g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	% Female
35.0-39.9	1	1.7	39.5	-	450	-	0.73	1	2.4	39.9	-	450	-	0.71	2	2.0	39.7	-	450	-	0.72	50
40.0-44.9	4	6.9	42.5	-	600	91	0.78	2	4.8	42.2	-	525	106	0.69	6	6.0	42.4	-	575	94	0.75	33
45.0-49.9	4	6.9	46.9	-	825	132	0.79	2	4.8	47.7	-	900	212	0.82	6	6.0	47.2	-	850	145	0.80	33
50.0-54.9	2	3.5	51.3	-	1575	35	1.17	2	4.8	52.9	-	1475	177	1.01	4	4.0	52.1	-	1525	119	1.09	50
55.0-59.9	2	3.5	59.3	-	1850	212	0.89	3	7.1	56.8	-	1833	29	1.00	5	5.0	57.8	-	1840	108	0.96	60
60.0-64.9	14	24.1	62.3	-	2164	226	0.89	11	26.2	62.7	-	2336	190	0.95	25	25.0	62.5	-	2240	224	0.92	44
65.0-69.9	10	17.2	67.7	-	2825	246	0.91	14	33.3	67.1	-	3000	318	0.99	24	24.0	67.4	-	2927	298	0.96	58
70.0-74.9	13	22.4	72.3	-	3300	1000	0.87	6	14.3	71.8	-	3400	432	0.92	19	19.0	72.1	-	3332	849	0.88	32
75.0-79.9	3	5.2	77.5	-	4600	218	0.99	1	2.4	75.1	-	3250	-	0.77	4	4.0	76.9	-	4236	698	0.93	25
80.0-84.9	5	8.6	82.2	-	4990	802	0.90	-	-	-	-	-	-	-	5	5.0	82.2	-	4990	802	0.90	-
Total	58							42							100							42
Mean			64.7	11.4	2641	1341	0.89			62.6	8.7	2455	889	0.94			63.8	10.3	2563	1171	0.91	

Table 15. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by the age group for Arctic charr taken from an unnamed lake (Arctic Bay area), 11-13 June, 1979.

Age (yr)	Males							Females							Combined						
	N	%	Length(cm) Mean	SD	Weight (g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	% Female
9	-	-	-	-	-	-	-	1	2.6	40.7	-	450	-	0.67	1	1.1	40.7	-	450	-	0.67	-
10	1	2.0	40.7	-	500	-	0.74	-	-	-	-	-	-	-	1	1.1	40.7	-	500	-	0.74	-
11	5	10.0	45.0	5.0	850	443	0.87	3	7.9	46.3	3.0	800	229	0.79	8	9.1	45.5	4.1	831	358	0.84	38
12	3	6.0	50.0	9.1	1133	752	0.82	-	-	-	-	-	-	-	3	3.4	50.0	9.1	1133	752	0.82	-
13	3	6.0	60.5	9.0	2117	653	0.96	3	7.9	51.0	9.7	1383	808	0.92	6	6.8	55.8	9.9	1750	770	0.94	50
14	6	12.0	60.4	7.0	2050	689	0.89	2	5.3	57.1	8.3	2000	566	1.08	8	9.1	59.6	6.8	2038	620	0.94	25
15	8	16.0	66.8	6.2	2806	934	0.91	6	15.8	63.9	2.5	2500	383	0.95	14	15.9	65.6	5.1	2675	743	0.93	43
16	8	16.0	75.2	6.9	4088	1186	0.94	7	18.4	64.4	5.0	2621	619	0.96	15	17.0	70.2	8.1	3403	1200	0.95	47
17	6	12.0	69.8	4.8	3142	745	0.91	7	18.4	65.5	6.0	2707	717	0.95	13	14.8	67.5	5.7	2908	734	0.93	54
18	4	8.0	72.7	2.5	3263	531	0.85	4	10.5	67.3	4.4	3075	595	1.00	8	9.1	70.0	4.4	3169	532	0.92	50
19	1	2.0	61.5	-	2150	-	0.92	4	10.5	69.6	3.2	3325	474	0.98	5	5.7	68.0	4.6	3090	667	0.97	80
20	1	2.0	73.0	-	4300	-	1.11	-	-	-	-	-	-	-	1	1.1	73.0	-	4300	-	1.11	-
21	2	4.0	64.5	6.0	2500	1061	0.90	-	-	-	-	-	-	-	2	2.3	64.5	6.0	2500	1061	0.90	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	2	4.0	62.4	0.4	2250	-	0.93	1	2.6	64.5	-	2450	-	0.91	3	3.4	63.1	1.3	2317	116	0.92	33
Total	50							38							88							43
Mean			63.9	11.2	2596	1273	0.90			61.9	8.8	2404	912	0.94			63.0	10.2	2513	1130	0.92	
Mean Age		15.5							15.8							15.6						

Table 16. Test fishery results for Arctic charr from Keltie Inlet (Cape Dorset area), May, 1977.

PRODUCTION	QUOTA	PRODUCTION
	Nil	372.1 kg

CATCH-EFFORT

Total number of fish	Mesh Size (mm)	Net depth (meshes)	Hours set per 100 (m)	CPE[1]	CPE[2]
57	127	-	13.1	104.4	203.1

LENGTH-WEIGHT RELATIONSHIP $\log_{10} W = a + b (\log_{10} L)$

Sex	N	Y-intercept (a)	Slope (b)	95% C.I. of b
Total	40	-2.4225	3.2350	2.8038 - 3.6662

MORTALITY insufficient data

[1]CPE = No. fish/100 m/24 h.
[2]CPE = kg rd wt/100 m/24 h.

Table 17. Length composition of Arctic charr from the test fishery at Keltie Inlet (Cape Dorset area), May, 1977.

Length Interval (cm)	N	%	Length (cm) Mean	Length (cm) SD	Dressed Weight(g)[a] Mean	Dressed Weight(g)[a] SD
50.0-54.9	4	10.0	53.5	-	1313	325
55.0-59.9	6	15.0	58.0	-	1992	408
60.0-64.9	7	17.5	63.4	-	2714	267
65.0-69.9	12	30.0	67.4	-	3288	345
70.0-74.9	9	22.5	72.3	-	3822	527
75.0-79.9	2	5.0	78.4	-	4200	141
Total	40					
Mean			65.5	6.8	2961	921

[a]Fish examined in dressed form therefore data by sex not available.

Table 18. Age composition of Arctic charr from the test fishery at Keltie Inlet (Cape Dorset area), May 1977.

Age (yr)	N	%	Length (cm) Mean	Length (cm) SD	Dressed Weight(g)[a] Mean	Dressed Weight(g)[a] SD
11	1	2.9	54.0	-	1150	-
12	4	11.4	57.1	7.7	1938	1182
13	6	17.1	64.0	5.4	2792	598
14	6	17.1	60.2	3.5	2183	547
15	4	11.4	68.9	4.1	3700	752
16	8	22.9	67.5	3.8	3106	406
17	4	11.4	74.8	4.7	4038	588
18	-	-	-	-	-	-
19	1	2.9	69.9	-	3650	-
20	1	2.9	67.9	-	3200	-
Total	35					
Mean			65.2	6.9	2897	939
Mean Age		14.7				

[a]Fish examined in dressed form therefore data by sex not available.

Table 19. Test fishery results for nonanadromous Arctic charr from Teshikalik Lake (Coral Harbour area), 13-20 November, 1979.

PRODUCTION	Quota	Harvest		
	454 kg	29.6 kg		
CATCH-EFFORT	Total Number of Fish	Mesh Size (mm)	Net Length (m)	
	31	89	15.2	
	10	139	15.2	
LENGTH-WEIGHT RELATIONSHIP	$\log_{10} W = a + b (\log_{10} L)$			
Sex	N	Y-intercept (a)	Slope (b)	95% C.I. of b
Male	37	-1.2773	2.5211	2.0189 - 3.0233
Female	4	-0.9525	2.3208	-1.7873 - 6.4289
Total	41	-1.2591	2.5101	2.0458 - 2.9744
MORTALITY	insufficient data			

Table 20. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by length interval for nonanadromous Arctic charr taken from Teshikalik Lake, (Coral Harbour area), 13-20 November, 1979.

Length Interval (cm)	Males							Females							Combined							
	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	% Female
25.0-29.9	1	2.7	28.9	-	216	-	0.89	-	-	-	-	-	-	-	1	2.4	28.9	-	216	-	0.89	-
30.0-34.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35.0-39.9	6	16.2	37.9	-	523	71	0.96	2	50.0	37.9	-	525	106	0.96	8	19.5	37.9	-	524	72	0.96	25
40.0-44.0	14	37.8	42.7	-	694	96	0.89	2	50.0	42.5	-	660	14	0.86	16	39.0	42.7	-	690	90	0.89	13
45.0-49.9	14	37.8	46.7	-	851	169	0.84	-	-	-	-	-	-	-	14	34.1	46.7	-	851	169	0.84	-
50.0-54.9	2	5.4	50.7	-	1105	219	0.85	-	-	-	-	-	-	-	2	4.9	50.7	-	1105	219	0.85	
Total	37							4							41							
Mean			43.5	4.5	735	210	0.88			40.2	2.7	593	99	0.91			43.2	4.4	721	206	0.88	10

Table 21. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by age group for nonanadromous Arctic charr taken from Teshikalik Lake (Coral Harbour area), 13-20 November, 1979.

Age (yr)	Males							Females							Combined							
	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	% Female
10	1	5.0	28.9	-	216	-	0.89	-	-	-	-	-	-	-	1	4.5	28.9	-	216	-	0.89	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	1	5.0	48.3	-	880	-	0.78	-	-	-	-	-	-	-	1	4.5	48.3	-	880	-	0.78	-
13	1	5.0	36.4	-	480	-	1.00	-	-	-	-	-	-	-	1	4.5	36.4	-	480	-	1.00	-
14	2	10.0	39.6	0.5	600	-	0.97	1	50.0	42.8	-	670	-	0.85	3	13.6	40.6	1.9	623	40	0.93	33
15	2	10.0	42.0	2.8	660	57	0.90	-	-	-	-	-	-	-	2	9.1	42.0	2.8	660	57	0.90	-
16	1	5.0	43.6	-	770	-	0.93	-	-	-	-	-	-	-	1	4.5	43.6	-	770	-	0.93	
17	1	5.0	46.0	-	930	-	0.96	-	-	-	-	-	-	-	1	4.5	46.0	-	930	-	0.96	-
18	3	15.0	40.5	4.5	580	167	0.86	-	-	-	-	-	-	-	3	13.6	40.5	4.5	580	167	0.86	-
19	1	5.0	44.7	-	760	-	0.85	1	50.0	38.4	-	600	-	1.06	2	9.1	41.6	4.5	680	113	0.96	33
20	2	10.0	44.7	4.4	765	375	0.82	-	-	-	-	-	-	-	2	9.1	44.7	4.4	765	375	0.82	-
22	3	15.0	45.4	2.4	757	93	0.81	-	-	-	-	-	-	-	3	13.6	45.4	2.4	757	93	0.81	-
23	1	5.0	42.7	-	670	-	0.86	-	-	-	-	-	-	-	1	4.5	42.7	-	670	-	0.86	-
27	1	5.0	48.3	-	550	-	0.49	-	-	-	-	-	-	-	1	4.5	48.3	-	550	-	0.49	-
Total	20							2							22							
Mean			42.5	4.9	666	189	0.86			40.6	3.1	635	49	0.96			42.3	4.7	663	180	0.87	9
Mean Age	17.7							16.5							17.6							

Table 22. Test fishery results for Arctic charr from Qualluatik Lake (Frobisher Bay area), November, 1976.

PRODUCTION not available

CATCH-EFFORT - not available

MESH SIZE (mm) 139

LENGTH-WEIGHT RELATIONSHIP $\log_{10} W = a + b (\log_{10} L)$

Sex	N	Y-intercept (a)	Slope (b)	95% C.I. of b
Male	32	-2.5507	3.2336	2.4772 - 3.9900
Female	24	-1.9518	2.9163	2.1325 - 3.7001
Total	56	-1.8428	2.8497	2.4861 - 3.2133

MORTALITY

Age-classes used	N	Survival (S)	S E of S	Annual Mortality Rate (A), where A = 1-S
17-20	17	0.54	0.08	0.46

Table 23. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by length interval for Arctic charr taken from Qualluatik Lake (Frobisher Bay area), November, 1976.

Length Interval (cm)	Males							Females							Combined							% Female
			Length(cm)		Weight(g)					Length(cm)		Weight(g)					Length(cm)		Weight(g)			
	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	
40.0-44.9	-	-	-	-	-	-	-	1	4.2	43.2	-	454	-	0.56	1	1.8	43.2	-	454	-	0.56	-
45.0-49.9	-	-	-	-	-	-	-	2	8.3	47.0	-	907	321	0.90	2	3.6	47.0	-	907	321	0.90	-
50.0-54.9	-	-	-	-	-	-	-	3	12.5	51.9	-	1285	131	0.93	3	5.4	51.9	-	1285	131	0.93	-
55.0-59.9	2	6.3	57.8	-	1475	161	0.76	9	37.5	57.7	-	1512	196	0.79	11	19.6	57.7	-	1505	183	0.78	55
60.0-64.9	6	18.8	62.4	-	1814	143	0.75	9	37.5	61.8	-	1890	254	0.80	15	26.8	62.1	-	1860	213	0.78	60
65.0-69.9	15	46.8	68.0	-	2389	428	0.76	-	-	-	-	-	-	-	15	26.8	68.0	-	2389	428	0.76	-
70.0-74.9	8	25.0	71.9	-	2835	402	0.76	-	-	-	-	-	-	-	8	14.3	71.9	-	2835	402	0.76	-
75.0-79.9	1	3.1	77.5	-	4082	-	0.88	1	-	-	-	-	-	-	1	1.8	77.5	-	4082	-	0.88	-
Total	32							24							56							43
Mean			67.6	4.6	2389	620	0.76			57.0	5.6	1531	429	0.81			63.1	7.3	2021	691	0.78	

Table 24. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by age group for Arctic charr taken from Qualluatik Lake (Frobisher Bay area), November, 1976.

Age (yr)	Males							Females							Combined							% Female
			Length(cm)		Weight(g)					Length(cm)		Weight(g)					Length(cm)		Weight (g)			
	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	
10	-	-	-	-	-	-	-	1	5.9	50.2	-	1361	-	1.08	1	2.5	50.2	-	1361	-	1.08	-
11	-	-	-	-	-	-	-	3	17.6	45.7	2.6	756	346	0.79	3	7.5	45.7	2.6	756	346	0.79	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	1	4.3	63.5	-	1814	-	0.71	1	5.9	52.1	-	1361	-	0.96	2	5.0	57.8	8.1	1588	320	0.84	50
14	-	-	-	-	-	-	-	2	11.8	57.2	1.8	1475	161	0.80	2	5.0	57.2	1.8	1475	161	0.80	-
15	2	8.7	61.3	1.3	1928	161	0.84	-	-	-	-	-	-	-	2	5.0	61.3	1.3	1928	161	0.84	-
16	7	30.4	65.8	5.5	2236	710	0.76	6	35.3	59.7	2.2	1777	363	0.83	13	32.5	63.0	5.2	2024	603	0.79	46
17	6	26.1	67.3	2.5	2155	492	0.70	-	-	-	-	-	-	-	6	15.0	67.3	2.5	2155	492	0.70	-
18	2	8.7	63.5	7.2	2155	802	0.82	2	11.8	61.6	0.9	1701	160	0.73	4	10.0	62.6	4.3	1928	540	0.77	50
19	4	17.4	68.8	2.5	2495	262	0.77	2	11.8	59.7	5.4	1815	641	0.83	6	15.0	65.7	5.6	2268	497	0.79	33
20	1	4.3	68.6	-	1814	-	0.56	-	-	-	-	-	-	-	1	2.5	68.6	-	1814	-	0.56	-
Total	23							17							40							43
Mean			66.1	4.3	2189	519	0.75			56.2	6.2	1508	487	0.83			61.9	7.1	1900	605	0.78	
Mean Age		16.9							14.9							16.1						

Table 25. Test fishery results for Arctic charr from an unnamed lake (Frobisher Bay area), 6-12 April, 1978.

PRODUCTION	Quota	Harvest	CATCH-EFFORT	Total number of fish	Mesh Size(mm)	Net depth (meshes)	Hours set per 100(m)	CPE[1]	CPE[2]
	682 kg	21.86 kg		18	114	40	94.5	4.6	5.6
				-	139	40	60.5	-	-

LENGTH-WEIGHT RELATIONSHIP $\log_{10} W = a + b (\log_{10} L)$

Sex	N	Y-intercept (a)	Slope (b)	95% C.I. of b
Male	8	-2.1783	3.0485	0.6507 - 5.4463
Female	10	-1.9046	2.8776	1.8611 - 3.8941
Total	18	-2.0420	2.9629	2.0702 - 3.8556

MORTALITY

insufficient data

[1]CPE = No. fish/100 m/24 h.
[2]CPE = kg rd wt/100 m/24 h.

Table 26. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by length interval for Arctic charr taken from an unnamed lake (Frobisher Bay area), 6-12 April, 1976.

Length Interval (cm)	Males							Females							Combined							% Female
			Length(cm)		Weight (g)					Length(cm)		Weight(g)					Length(cm)		Weight(g)			
	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	
40.0-44.9	-	-	-	-	-	-	-	1	10.0	43.6	-	610	-	0.74	1	5.6	43.6	-	610	-	0.74	-
45.0-49.9	1	12.5	49.8	-	820	-	0.66	2	20.0	48.8	-	925	35	0.80	3	16.7	49.1	-	890	66	0.75	67
50.0-54.9	4	50.0	52.2	-	1195	49	0.84	3	30.0	53.2	-	1217	104	0.81	7	38.9	52.6	-	1204	70	0.83	43
55.0-59.9	2	25.0	57.2	-	1375	177	0.75	4	40.0	57.9	-	1438	278	0.74	6	33.3	57.6	-	1417	232	0.74	67
60.0-64.9	1	12.5	60.1	-	2150	-	0.99	-	-	-	-	-	-	-	1	5.6	60.1	-	2150	-	0.99	-
Total	8							10							18							56
Mean			54.1	3.9	1313	387	0.82			53.2	5.0	1186	330	0.77			53.6	4.4	1242	351	0.79	

Table 27. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by age group for Arctic charr taken from an unnamed lake (Frobisher Bay area), 6-12 April, 1978.

Age (yr)	Males							Females							Combined							% Female
			Length(cm)		Weight (g)					Length(cm)		Weight(g)					Length(cm)		Weight (g)			
	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	
15	1	20.0	60.1	-	2150	-	0.99	-	-	-	-	-	-	-	1	12.5	60.1	-	2150	-	0.99	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	1	33.3	48.5	-	950	-	0.83	1	12.5	48.5	-	950	-	0.83	-
19	1	20.0	53.0	-	1200	-	0.81	-	-	-	-	-	-	-	1	12.5	53.0	-	1200	-	0.81	-
20	1	20.0	55.0	-	1500	-	0.90	1	33.3	57.4	-	1550	-	0.82	2	25.0	56.2	1.7	1525	35	0.86	50
21	1	20.0	50.1	-	1130	-	0.90	-	-	-	-	-	-	-	1	12.5	50.1	-	1130	-	0.90	-
30	1	20.0	59.4	-	1250	-	0.60	1	33.3	57.6	-	1450	-	0.76	2	25.0	58.5	1.3	1350	141	0.68	50
Total	5							3							8							38
Mean			55.5	4.2	1445	418	0.84			54.5	5.2	1317	322	0.80			55.1	4.3	1398	366	0.83	
Mean Age		21.0							22.7							21.6						

Table 28. Test fishery results for Arctic charr from Hall Lake (Igloolik area), 23 August - 1 September, 1975.

PRODUCTION not available CATCH-EFFORT - not available MESH SIZE (mm) 139

LENGTH-WEIGHT RELATIONSHIP $\log_{10} W = a + b (\log_{10} L)$

Sex	N	Y-intercept (a)	Slope (b)	95% C.I. of b
Male	57	-1.8471	2.9858	2.7559 - 3.2157
Female	23	-1.8330	2.9728	2.7247 - 3.2205
Total	80	-1.8558	2.9892	2.8163 - 3.1621

MORTALITY

Age-classes used	N	Survival (S)	S E of S	Annual Mortality Rate (A), where A = 1-S
13-23	37	0.78	0.03	0.22

Table 29. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by length interval for Arctic charr taken from Hall Lake (Igloolik area), 23 August - 1 September, 1975.

Length Interval (cm)	Males							Females							Combined							% Female
	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	k	
30.0-34.9	-	-	-	-	-	-	-	1	4.4	34.0	-	500	-	1.27	1	1.3	34.0	-	500	-	1.27	-
35.0-39.9	2	3.5	37.0	-	700	141	1.37	-	-	-	-	-	-	-	2	2.5	37.0	-	700	141	1.37	-
40.0-44.9	3	5.3	43.7	-	1033	58	1.24	1	4.4	43.0	-	900	-	1.13	4	5.0	43.5	-	1000	82	1.21	25
45.0-49.9	2	3.5	47.0	-	1100	566	1.02	2	8.7	47.0	-	1350	354	1.28	4	5.0	47.0	-	1225	411	1.15	50
50.0-54.9	6	10.5	53.2	-	2233	234	1.49	4	17.4	53.0	-	2225	222	1.50	10	12.5	53.1	-	2230	216	1.49	40
55.0-59.9	9	15.8	58.9	-	2767	638	1.35	4	17.4	56.7	-	2300	183	1.27	13	16.3	58.2	-	2623	575	1.33	31
60.0-64.9	7	12.3	61.1	-	3486	313	1.53	2	8.7	62.0	-	3350	212	1.41	9	11.3	61.3	-	3456	288	1.50	22
65.9-69.9	9	15.8	65.7	-	3867	409	1.37	5	21.8	68.5	-	4220	370	1.32	14	17.5	66.7	-	3993	420	1.35	36
70.0-74.9	9	15.8	71.8	-	5144	495	1.39	3	13.0	71.0	-	4433	351	1.24	12	15.0	71.6	-	4967	552	1.35	25
75.0-79.9	9	15.8	77.3	-	5778	438	1.25	1	4.4	76.0	-	5500	-	1.25	10	12.5	77.2	-	5750	422	1.25	10
80.0-84.9	1	1.8	80.0	-	5200	-	1.02	-	-	-	-	-	-	-	1	1.3	80.0	-	5200	-	1.02	-
Total	57							23							80							29
Mean			63.0	11.0	3644	1599	1.36			59.4	10.8	2991	1378	1.32			61.9	11.0	3456	1559	1.35	

Table 30. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by age group for Arctic charr taken from Hall Lake (Igloolik area), 23 August - 1 September, 1975.

Age (yr)	Males							Females							Combined							% Female
	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	
6	1	2.4	35.0	-	600	-	1.40	-	-	-	-	-	-	-	1	1.7	35.0	-	600	-	1.40	-
7	-	-	-	-	-	-	-	1	6.3	34.0	-	500	-	1.27	1	1.7	34.0	-	500	-	1.27	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	3	7.1	52.3	6.7	1900	1082	1.20	1	6.3	43.0	-	900	-	1.13	4	6.9	50.0	7.2	1650	1015	1.18	25
10	2	4.8	59.5	0.8	2650	1344	1.25	1	6.3	57.0	-	2500	-	1.35	3	5.2	58.5	1.5	2600	954	1.28	33
11	2	4.8	51.6	10.7	1550	636	1.13	2	12.5	48.5	5.0	1750	919	1.46	4	6.9	50.0	7.0	1650	656	1.29	50
12	6	14.3	56.8	7.7	2750	1015	1.43	2	12.5	53.0	-	2100	283	1.41	8	13.8	55.8	6.8	2588	916	1.42	25
13	2	4.8	54.5	21.9	3000	3111	1.43	2	12.5	51.5	3.5	1950	495	1.41	4	6.9	53.0	12.9	2475	1917	1.42	50
14	6	14.3	61.0	4.9	3450	826	1.49	1	6.3	61.0	-	3200	-	1.41	7	12.1	61.0	4.4	3414	760	1.48	14
15	3	7.1	72.0	7.0	5467	1002	1.47	1	6.3	71.0	-	4800	-	1.34	4	6.9	71.8	5.7	5300	883	1.44	25
16	5	11.9	62.2	9.0	3640	1408	1.46	1	6.3	59.6	-	2400	-	1.13	6	10.3	61.8	8.2	3433	1358	1.41	17
17	4	9.5	64.5	11.5	3650	1212	1.37	2	12.5	70.8	1.8	4200	283	1.19	6	10.3	66.6	9.5	3833	989	1.31	33
18	3	7.1	67.3	5.1	4067	987	1.32	-	-	-	-	-	-	-	3	5.2	67.3	5.1	4067	987	1.32	-
19	-	-	-	-	-	-	-	2	12.5	69.0	-	4100	566	1.25	2	3.4	69.0	-	4100	566	1.25	-
20	2	4.8	73.0	8.5	5050	1344	1.29	-	-	-	-	-	-	-	2	3.4	73.0	8.5	5050	1344	1.29	-
21	1	2.4	79.0	-	5500	-	1.12	-	-	-	-	-	-	-	1	1.7	79.0	-	5500	-	1.12	-
22	1	2.4	77.0	-	6000	-	1.31	-	-	-	-	-	-	-	1	1.7	77.0	-	6000	-	1.31	-
23	1	2.4	75.0	-	5700	-	1.35	-	-	-	-	-	-	-	1	1.7	75.0	-	5700	-	1.35	-
Total	42							16							58							28
Mean			61.8	10.9	3491	1582	1.37			56.9	11.2	2656	1329	1.32			60.4	11.1	3260	1551	1.36	
Mean Age	14.5							13.4							14.2							

Table 31. Test fishery results for Arctic charr from Hall Lake (Igloolik area), 16 August - 4 September, 1976.

PRODUCTION — Quota: 13,607.7 kg; Harvest: 13,607.7 kg; CATCH EFFORT - not available; MESH SIZE (mm) 139

LENGTH-WEIGHT RELATIONSHIP $\log_{10} W = a + b (\log_{10} L)$

Sex	N	Y-intercept (a)	Slope (b)	95% C.I. of b
Male	59	-0.7416	2.3861	2.1192 - 2.6530
Female	43	-0.6945	2.3445	2.0729 - 2.6161
Total	102	-0.7925	2.4075	2.2166 - 2.5984

MORTALITY

Age-classes used	N	Survival (S)	S E of S	Annual Mortality Rate (A), where A = 1-S
17-26	27	0.69	0.05	0.31

Table 32. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by length interval for Arctic charr taken from Hall Lake (Igloolik area), 16 August - 4 September, 1976.

Length Interval (cm)	Males							Females							Combined							% Female
			Length(cm)		Weight(g)					Length(cm)		Weight(g)					Length(cm)		Weight(g)			
	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	
45.0-49.9	-	-	-	-	-	-	-	1	2.3	48.0	-	1700	-	1.54	1	1.0	48.0	-	1700	-	1.54	-
50.0-54.9	6	10.2	52.1	-	2633	695	1.85	6	14.0	51.8	-	2295	623	1.64	12	11.8	51.9	-	2464	654	1.75	50
55.0-59.9	7	11.9	56.0	-	2473	204	1.41	6	14.0	57.1	-	2563	178	1.39	13	12.8	56.5	-	2514	190	1.40	46
60.0-64.9	5	8.5	61.3	-	3129	747	1.37	7	16.3	62.9	-	3305	389	1.32	12	11.8	62.2	-	3231	542	1.34	58
65.0-69.9	12	20.3	66.6	-	4072	497	1.38	7	16.3	68.0	-	3816	516	1.21	19	18.6	67.2	-	3977	506	1.32	37
70.0-74.9	12	20.3	73.5	-	5057	595	1.27	12	27.9	72.4	-	4781	565	1.26	24	23.5	72.9	-	4919	585	1.27	50
75.0-79.9	11	18.6	76.6	-	5940	753	1.32	3	7.0	76.5	-	5202	592	1.17	14	13.7	76.6	-	5782	768	1.29	21
80.0-84.9	3	5.1	81.2	-	7361	609	1.38	1	2.3	81.3	-	6804	-	1.27	4	3.9	81.2	-	7222	570	1.35	25
85.0-89.9	3	5.1	87.1	-	7376	801	1.11	-	-	-	-	-	-	-	3	2.9	87.1	-	7376	801	1.11	-
Total	59							43							102							42
Mean			68.5	9.9	4540	1642	1.38			65.1	8.8	3732	1234	1.33			67.0	9.5	4199	1530	1.36	

Table 33. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by age group for Arctic charr taken from Hall Lake (Igloolik area), 16 August - 4 September, 1976.

Age (yr)	Males							Females							Combined							% Female
			Length(cm)		Weight(g)					Length(cm)		Weight(g)					Length(cm)		Weight(g)			
	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	
9	-	-	-	-	-	-	-	1	2.8	48.0	-	1700	-	1.54	1	1.1	48.0	-	1700	-	1.54	-
10	1	2.0	50.7	-	2400	-	1.84	2	5.6	65.2	1.2	4112	42	1.49	3	3.4	60.3	8.4	3541	989	1.61	67
11	5	9.8	57.7	6.0	2726	669	1.40	2	5.6	51.1	1.3	2100	141	1.57	7	8.0	55.8	5.9	2547	628	1.45	29
12	4	7.8	58.4	10.2	2888	1178	1.44	3	8.3	57.0	7.3	2628	685	1.42	7	8.0	57.8	8.4	2776	932	1.43	43
13	1	2.0	58.4	-	2327	-	1.17	6	16.7	59.9	7.2	2881	960	1.31	7	8.0	59.7	6.6	2802	901	1.29	86
14	6	11.8	70.2	4.4	4743	813	1.37	4	11.1	61.3	7.0	2941	609	1.29	10	11.5	66.6	6.9	4022	1165	1.34	40
15	8	15.7	69.4	9.8	4795	1570	1.44	4	11.1	67.0	4.3	3969	758	1.31	12	13.8	68.6	8.2	4520	1375	1.40	33
16	8	15.7	67.1	3.7	4184	527	1.41	5	13.9	66.9	9.5	3921	690	1.40	13	14.9	67.0	6.2	4083	582	1.41	39
17	8	15.7	68.7	9.2	4706	1393	1.45	3	8.3	72.6	0.4	4687	524	1.2	11	12.6	69.8	7.9	4701	1189	1.39	27
18	1	2.0	55.9	-	2800	-	1.60	1	2.8	57.8	-	2667	-	1.38	2	2.3	56.9	1.3	2734	94	1.49	50
19	1	2.0	75.0	-	5600	-	1.33	3	8.3	75.4	5.6	5880	1145	1.36	4	4.6	75.3	4.6	5810	945	1.35	75
20	2	3.9	82.1	9.7	7039	1752	1.27	-	-	-	-	-	-	-	2	2.3	82.1	9.7	7039	1752	1.27	-
21	2	3.9	76.0	14.1	5421	2375	1.21	2	5.6	65.1	8.6	3398	1129	1.22	4	4.6	70.5	11.5	4410	1915	1.21	50
22	3	5.9	77.3	7.9	5295	1313	1.14	-	-	-	-	-	-	-	3	3.4	77.3	7.9	5295	1313	1.14	-
26	1	2.0	80.3	-	6700	-	1.29	-	-	-	-	-	-	-	1	1.1	80.3	-	6700	-	1.29	-
Total	51							36							87							41
Mean			67.7	9.8	4387	1526	1.39			63.6	8.7	3547	1220	1.35			66.0	9.5	4040	1461	1.38	
Mean Age		15.8							14.7							15.3						

Table 34. Test fishery results for Arctic charr from Hall Lake (Igloolik area), 14 - 31 August, 1977.

PRODUCTION — Quota: 13,607.7 kg — Harvest: 13,607.7 kg — CATCH EFFORT - not available — MESH SIZE (mm) 139

LENGTH-WEIGHT RELATIONSHIP log W = a + b (log L)

Sex	N	Y-intercept (a)	Slope (b)	95% C.I. of b
Male	146	-1.4041	2.7139	2.5640 - 2.8638
Female	123	-1.0680	2.5193	2.3603 - 2.6783
Total	269	-1.2964	2.6508	2.5411 - 2.7605

MORTALITY

Age-classes used	N	Survival (S)	S E of S	Annual Mortality Rate (A), where A = 1-S
13-24	151	0.75	0.02	0.25

Table 35. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by length interval for Arctic charr taken from Hall Lake (Igloolik area), 14 - 31 August, 1977.

Length Interval (cm)	Males							Females							Combined							
			Length(cm)		Weight(g)					Length(cm)		Weight(g)					Length(cm)		Weight(g)			
	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	% Female
45.0-49.9	2	1.4	47.0	-	1361	321	1.31	1	0.8	48.3	-	1588	-	1.41	3	1.1	47.4	-	1437	262	1.34	33
50.0-54.9	10	6.9	53.2	-	1914	189	1.27	17	13.8	52.8	-	1884	222	1.28	27	10.0	52.9	-	1895	207	1.28	63
55.0-59.9	37	25.3	57.9	-	2415	224	1.25	29	23.6	57.1	-	2282	349	1.23	66	24.5	57.5	-	2357	291	1.24	44
60.0-64.9	31	21.2	62.8	-	2940	395	1.19	30	24.4	62.6	-	2876	331	1.17	61	22.7	62.7	-	2908	363	1.18	49
65.0-69.9	28	19.2	67.5	-	3671	459	1.19	23	18.7	67.3	-	3504	359	1.15	51	19.0	67.4	-	3596	422	1.17	45
70.0-74.9	20	13.7	72.4	-	4568	595	1.20	19	15.5	72.8	-	4230	495	1.10	39	14.5	72.6	-	4404	568	1.15	49
75.0-79.9	10	6.9	77.4	-	5279	428	1.14	4	3.3	76.8	-	4675	127	1.03	14	5.2	77.2	-	5107	459	1.11	29
80.0-84.9	7	4.8	81.3	-	6074	1138	1.13	-	-	-	-	-	-	-	7	2.6	81.3	-	6074	1138	1.13	-
85.0-89.9	1	0.7	85.1	-	5897	-	0.96	-	-	-	-	-	-	-	1	0.4	85.1	-	5897	-	0.96	-
Total	146							123							269							46
Mean			64.9	8.0	3409	1239	1.21			62.7	7.2	2973	901	1.18			63.9	7.7	3210	1117	1.19	

Table 36. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by age group for Arctic charr taken from Hall Lake (Igloolik area), 14 - 31 August, 1977.

Age (yr)	Males							Females							Combined							
			Length(cm)		Weight (g)					Length(cm)		Weight(g)					Length(cm)		Weight (g)			
	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	% Female
8	1	0.8	53.3	-	1814	-	1.20	-	-	-	-	-	-	-	1	0.4	53.3	-	1814	-	1.20	-
9	2	1.6	52.7	8.1	1928	1123	1.23	-	-	-	-	-	-	-	2	0.9	52.7	8.1	1928	1123	1.23	-
10	6	4.7	54.8	4.3	1955	264	1.20	3	3.0	55.0	1.6	2106	309	1.27	9	4.0	54.9	3.5	2005	270	1.22	33
11	11	8.7	58.6	3.8	2548	460	1.26	6	6.1	54.7	2.6	2026	290	1.24	17	7.5	57.2	3.8	2364	474	1.25	35
12	26	20.5	58.6	4.4	2594	600	1.27	20	20.2	57.6	5.0	2401	581	1.24	46	20.4	58.2	4.7	2510	594	1.26	44
13	18	14.2	64.7	5.4	3279	954	1.19	11	11.1	56.4	5.6	2239	529	1.24	29	12.8	61.6	6.8	2885	957	1.21	38
14	9	7.1	62.7	4.5	3012	599	1.22	8	8.1	61.4	4.1	2902	682	1.23	17	7.5	62.1	4.2	2960	621	1.23	47
15	12	9.4	69.2	7.6	3935	1246	1.16	16	16.2	63.6	4.4	2925	602	1.13	28	12.4	66.0	6.5	3358	1046	1.14	57
16	12	9.4	66.9	7.0	3527	942	1.17	7	7.1	64.4	5.6	3337	865	1.23	19	8.4	66.0	6.5	3457	895	1.19	37
17	10	7.9	67.4	6.2	3792	1072	1.21	11	11.1	65.1	5.1	3221	762	1.15	21	9.3	66.2	5.6	3493	945	1.18	52
18	11	8.7	74.6	7.1	4908	1485	1.15	8	8.1	68.4	7.9	3686	884	1.14	19	8.4	72.0	7.9	4393	1383	1.15	42
19	6	4.7	71.1	4.1	4455	740	1.24	5	5.1	67.9	6.9	3585	1211	1.10	11	4.9	69.7	5.5	4059	1033	1.18	46
20	1	0.8	74.6	-	4450	-	1.07	-	-	-	-	-	-	-	1	0.4	74.6	-	4450	-	1.07	-
21	-	-	-	-	-	-	-	2	2.0	74.6	0.5	4418	167	1.07	2	0.9	74.6	0.5	4418	167	1.07	-
22	1	0.8	78.7	-	5670	-	1.16	1	1.0	67.3	-	3629	-	1.19	2	0.9	73.0	8.1	4650	1443	1.18	50
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	1	0.8	80.0	-	5300	-	1.04	1	1.0	73.0	-	4000	-	1.03	2	0.9	76.5	4.9	4650	919	1.03	50
Total	127							99							226							44
Mean			64.3	8.1	3328	1212	1.21			61.8	6.9	2867	860	1.19			63.2	7.7	3126	1094	1.20	
Mean Age		14.2							14.7							14.4						

Table 37. Test fishery results for Arctic charr from Kipisa Lake (Pangnirtung area), 9 March, 1976.

PRODUCTION	Quota	Harvest	CATCH-EFFORT	Total number of fish	Mesh Size(mm)	Net depth (meshes)	Hours set per 100(m)	CPE[1]	CPE[2]
		737 kg		205	139	24	57.2	86.0	679.7

LENGTH-WEIGHT RELATIONSHIP $\log_{10} W = a + b (\log_{10} L)$

Sex	N	Y-intercept (a)	Slope (b)	95% C.I. of b
Male	27	-0.9286	2.4713	1.9557 - 2.9869
Female	14	-0.1840	2.0392	1.2820 - 2.7964
Total	41	-0.9751	2.4912	2.0903 - 2.8921

MORTALITY

insufficient data

[1]CPE = No. fish/100 m/24 h.
[2]CPE = kg rd wt/100 m/24 h.

Table 38. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by length interval for Arctic charr taken from Kipisa Lake (Pangnirtung area), 9 March, 1976.

Length Interval (cm)	Males							Females							Combined							% Female
			Length(cm)		Weight(g)					Length(cm)		Weight(g)					Length(cm)		Weight(g)			
	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	
50.0-54.9	1	3.7	54.5	-	2200	-	1.36	-	-	-	-	-	-	-	1	2.4	54.5	-	2200	-	1.36	-
55.0-59.9	2	7.4	56.7	-	2950	919	1.62	6	42.9	57.7	-	2583	194	1.34	8	19.5	57.5	-	2675	420	1.41	75
60.0-64.9	7	25.9	62.4	-	3171	341	1.30	3	21.4	61.8	-	2767	252	1.17	10	24.4	62.2	-	3050	361	1.27	30
65.0-69.9	10	37.0	67.9	-	3845	391	1.23	4	28.6	66.9	-	3600	469	1.21	14	34.2	67.6	-	3775	412	1.23	29
70.0-74.9	5	18.5	72.6	-	4810	545	1.26	1	7.1	73.0	-	4100	-	1.05	6	14.6	72.6	-	4692	567	1.23	17
75.0-79.9	2	7.4	78.5	-	6100	566	1.26	-	-	-	-	-	-	-	2	4.9	78.5	-	6100	566	1.26	-
Total	27							14							41							34
Mean			66.8	6.2	3889	1013	1.29			62.3	5.2	3021	609	1.25			65.2	6.2	3593	980	1.28	

Table 39. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by age group for Arctic charr taken from Kipisa Lake (Pangnirtung area), 9 March, 1976.

Age (yr)	Males							Females							Combined							% Female
			Length(cm)		Weight(g)					Length(cm)		Weight(g)					Length(cm)		Weight(g)			
	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	
10	1	4.3	78.0	-	5700	-	1.20	-	-	-	-	-	-	-	1	2.9	78.0	-	5700	-	1.20	-
11	1	4.3	56.5	-	2300	-	1.28	-	-	-	-	-	-	-	1	2.9	56.5	-	2300	-	1.28	-
12	3	13.0	63.7	3.1	3133	419	1.21	2	16.7	57.5	0.7	2550	71	1.34	5	14.3	61.2	4.0	2900	437	1.27	40
13	2	8.7	58.3	5.3	2750	778	1.37	-	-	-	-	-	-	-	2	5.7	58.3	5.3	2750	778	1.37	-
14	4	17.4	65.0	3.2	3650	676	1.32	2	16.7	57.4	0.9	2550	354	1.35	6	17.1	62.5	4.7	3283	789	1.33	33
15	7	30.4	68.4	2.9	3879	551	1.21	4	33.3	60.3	2.5	2700	245	1.24	11	31.4	65.5	4.9	3450	744	1.22	36
16	4	17.4	67.7	7.5	4238	629	1.42	3	25.0	67.3	6.0	3333	681	1.09	7	20.0	67.5	6.3	3850	765	1.28	43
17	-	-	-	-	-	-	-	1	8.3	69.5	-	4000	-	1.19	1	2.9	69.5	-	4000	-	1.19	-
18	1	4.3	79.0	-	6500	-	1.32	-	-	-	-	-	-	-	1	2.9	79.0	-	6500	-	1.32	-
Total	23							12							35							34
Mean			66.6	6.4	3830	1020	1.29			61.9	5.5	2917	577	1.23			64.9	6.4	3517	987	1.27	
Mean Age		14.2							14.8							14.4						

Table 40. Test fishery results for Arctic charr from Avataktoo Lake (Pangnirtung area), 14 December, 1977.

PRODUCTION not available CATCH-EFFORT - not available MESH SIZE (mm) 139

LENGTH-WEIGHT RELATIONSHIP $\log_{10} W = a + b (\log_{10} L)$

Sex	N	Y-intercept (a)	Slope (b)	95% C.I. of b
Male	29	-2.2325	3.1444	2.2998 - 3.9890
Female	70	-2.3620	3.2151	2.6511 - 3.7791
Total	99	-2.3593	3.2144	2.7604 - 3.6684

MORTALITY

Age-classes used	N	Survival (S)	S E of S	Annual Mortality Rate (A), where A = 1-S
14-18	40	0.56	0.05	0.44

Table 41. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by length interval for Arctic charr taken from Avataktoo Lake (Pangnirtung area), 14 December, 1977.

Length Interval (cm)	Males							Females							Combined							% Female
	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	
45.0-49.9	-	-	-	-	-	-	-	3	4.3	47.9	-	1051	390	0.95	3	3.0	47.9	-	1051	390	0.95	-
50.0-54.9	6	20.7	53.8	-	1644	210	1.05	19	27.1	52.9	-	1571	322	1.06	25	25.3	53.1	-	1588	296	1.06	76
55.0-59.9	16	55.2	57.5	-	2023	351	1.06	37	52.9	57.5	-	1983	290	1.04	53	53.5	57.5	-	1995	307	1.05	70
60.0-64.9	7	24.1	62.0	-	2528	242	1.06	10	14.3	61.1	-	2426	209	1.07	17	17.2	61.5	-	2468	222	1.06	59
65.0-69.9	-	-	-	-	-	-	-	1	1.4	65.3	-	2921	-	1.05	1	1.0	65.3	-	2921	-	1.05	-
Total	29							70							99							71
Mean			57.8	3.2	2067	423	1.06			56.5	3.7	1908	448	1.05			56.9	3.6	1954	445	1.05	

Table 42. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by age group for Arctic charr taken from Avataktoo Lake (Pangnirtung area), 14 December, 1977.

Age (yr)	Males							Females							Combined							% Female
	N	%	Length(cm) Mean	SD	Weight (g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	
11	2	9.5	60.0	3.1	2609	161	1.21	2	4.2	54.2	1.2	1744	61	1.10	4	5.8	57.1	3.9	2176	509	1.16	50
12	2	9.5	57.1	2.8	1745	138	0.94	7	14.6	54.7	3.7	1803	411	1.09	9	13.0	55.2	3.5	1790	360	1.06	78
13	4	19.1	55.2	0.7	1794	187	1.07	12	25.0	55.0	2.7	1796	306	1.08	16	23.2	55.1	2.3	1795	275	1.07	75
14	3	14.3	59.8	0.4	2478	347	1.16	9	18.8	58.7	3.8	2156	491	1.05	12	17.4	59.0	3.3	2236	468	1.08	75
15	4	19.1	60.8	2.9	2274	230	1.02	8	16.7	56.3	5.2	1828	533	0.99	12	17.4	57.8	4.9	1977	493	1.00	67
16	4	19.1	58.6	2.6	2175	555	1.07	8	16.7	57.3	3.5	1962	575	1.03	12	17.4	57.8	3.2	2033	553	1.04	67
17	1	4.8	54.0	-	1560	-	0.99	2	4.2	57.7	2.0	2171	863	1.11	3	4.3	56.5	2.6	1967	705	1.07	67
18	1	4.8	56.3	-	1787	-	1.00	-	-	-	-	-	-	-	1	1.4	56.3	-	1787	-	1.00	-
Total	21							48							69							70
Mean			58.2	2.9	2117	423	1.07			56.3	3.8	1911	463	1.06			56.9	3.6	1974	458	1.06	
Mean Age		14.2							14.0							14.0						

Table 43. Test fishery results for Arctic charr from Ikaluit Lake (Pangnirtung area), 25 August, 1977.

PRODUCTION — not available — CATCH-EFFORT - not available — Mesh Size (mm) 139

LENGTH-WEIGHT RELATIONSHIP $\log_{10} W = a + b (\log_{10} L)$

Sex	N	Y-intercept (a)	Slope (b)	95% C.I. of b
Male	40	-2.5034	3.3304	2.8732 - 3.7876
Female	11	-0.0845	1.9963	1.1657 - 2.8269
Total	51	-1.7770	2.9359	2.5538 - 3.3180

MORTALITY — insufficient data

Table 44. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by length interval for Arctic charr taken from Ikaluit Lake (Pangnirtung area), 25 August, 1977.

Length Interval (cm)	Males							Females							Combined							% Female
	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	
45.0-49.9	1	2.5	49.5	-	1474	-	1.22	-	-	-	-	-	-	-	1	2.0	49.5	-	1474	-	1.22	-
50.0-54.9	1	2.5	54.6	-	1361	-	0.84	2	18.2	52.7	-	2339	260	1.62	3	5.9	53.3	-	2013	593	1.36	67
55.0-59.9	-	-	-	-	-	-	-	2	18.2	58.7	-	2736	19	1.36	2	3.9	58.7	-	2736	19	1.36	-
60.0-64.9	7	17.5	63.4	-	3268	337	1.28	3	27.3	62.8	-	3024	329	1.22	10	19.6	63.3	-	3195	337	1.26	30
65.0-69.9	15	37.5	68.0	-	4115	481	1.31	3	27.3	67.3	-	3649	359	1.20	18	35.3	67.9	-	4037	488	1.29	17
70.0-74.9	10	25.0	71.9	-	4573	440	1.23	1	9.1	73.6	-	5216	-	1.31	11	21.6	72.1	-	4632	460	1.24	9
75.0-79.9	6	15.0	77.2	-	6243	855	1.35	-	-	-	-	-	-	-	6	11.8	77.2	-	6243	855	1.35	-
Total	40							11							51							22
Mean			68.8	5.9	4266	1212	1.28			62.4	6.6	3217	849	1.32			67.4	6.6	4039	1216	1.29	

Table 45. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by age group for Arctic charr taken from Ikaluit Lake (Pangnirtung area), 25 August, 1977.

Age (yr)	Males							Females							Combined							% Female
	N	%	Length(cm) Mean	SD	Weight (g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight (g) Mean	SD	K	
12	1	2.7	49.5	-	1474	-	1.22	2	18.2	58.7	1.3	2736	19	1.36	3	6.3	55.6	5.4	2315	729	1.31	67
13	1	2.7	61.5	-	3316	-	1.42	-	-	-	-	-	-	-	1	2.1	61.5	-	3316	-	1.43	-
14	1	2.7	63.5	-	3261	-	1.27	-	-	-	-	-	-	-	1	2.1	63.5	-	3261	-	1.27	-
15	8	21.6	67.2	2.4	4182	527	1.38	3	27.3	55.4	5.1	2513	354	1.51	11	22.9	64.0	6.3	3727	909	1.41	27
16	4	10.8	71.2	6.8	4558	1460	1.23	2	18.2	70.8	4.0	4225	1401	1.17	6	12.5	71.1	5.6	4447	1304	1.21	33
17	8	21.6	66.9	6.0	3849	1170	1.24	2	18.2	64.5	1.3	3332	741	1.24	10	20.8	66.4	5.4	3746	1083	1.24	20
18	10	27.0	71.8	4.3	4789	1300	1.27	2	18.2	66.3	3.1	3629	321	1.25	12	25.0	70.9	4.6	4595	1263	1.27	17
19	1	2.7	72.3	-	4309	-	1.14	-	-	-	-	-	-	-	1	2.1	72.3	-	4309	-	1.14	-
20	1	2.7	69.8	-	3742	-	1.10	-	-	-	-	-	-	-	1	2.1	69.8	-	3742	-	1.10	-
21	1	2.7	73.6	-	5103	-	1.28	-	-	-	-	-	-	-	1	2.1	73.6	-	5103	-	1.28	-
22	1	2.7	76.1	-	6409	-	1.45	-	-	-	-	-	-	-	1	2.1	76.1	-	6409	-	1.45	-
Total	37							11							48							23
Mean			68.7	6.0	4270	1212	1.28			62.4	6.6	3217	849	1.32			67.3	6.6	4028	1216	1.29	
Mean Age		16.8							15.6							16.5						

Table 46. Test fishery results for Arctic charr from Iyaravung Lake (Pangnirtung area), 5 May, 1978.

PRODUCTION	Quota	Harvest	CATCH-EFFORT	Total number of fish	Mesh Size(mm)	Net depth (meshes)	Hours set per 100 (n)	CPE[1]	CPE[2]
	454.6 kg	208.8 kg		105	139	60	5.5	458.2	911.1

LENGTH-WEIGHT RELATIONSHIP $\log_{10} W = a + b (\log_{10} L)$

Sex	N	Y-intercept (a)	Slope (b)	95% C.I. of b
Male	61	-0.9021	2.3569	1.8816 - 2.8322
Female	39	-1.1247	2.4874	1.5276 - 3.4472
Total	100	-0.8608	2.3355	1.9464 - 2.7246

MORTALITY

Age-classes used	N	Survival (S)	S E of S	Annual Mortality Rate (A), where A = 1-S
15-19	34	0.60	0.05	0.40

[1]CPE = No. fish/100 m/24 h.
[2]CPE = kg rd wt/100 m/24 h.

Table 47. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by length interval for Arctic charr taken from Iyaravung Lake (Pangnirtung area), 5 May, 1978.

Length Interval (cm)	Males							Females							Combined							% Female
	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	
50.0-54.9	2	3.3	51.5	-	1300	141	0.95	6	15.4	53.2	-	1583	512	1.05	8	8.0	52.8	-	1513	455	1.02	75
55.0-59.9	11	18.0	57.2	-	1773	344	0.94	21	53.8	57.8	-	1824	399	0.94	32	32.0	57.6	-	1806	376	0.94	66
60.0-64.9	23	37.7	62.0	-	2165	346	0.91	9	23.1	60.9	-	2089	314	0.92	32	32.0	61.7	-	2144	334	0.91	28
65.0-69.9	20	32.8	66.8	-	2465	287	0.83	3	7.7	67.0	-	2600	200	0.86	23	23.0	66.8	-	2483	277	0.83	13
70.0-74.9	5	8.2	71.2	-	3000	464	0.84	-	-	-	-	-	-	-	5	5.0	71.2	-	3000	464	0.84	-
Total	61							39							100							39
Mean			63.1	4.8	2233	491	0.86			58.5	3.7	1908	455	0.95			61.3	5.0	2106	501	0.91	

Table 48. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by age group for Arctic charr taken from Iyaravung Lake (Pangnirtung area), 5 May, 1978.

Age (yr)	Males							Females							Combined							% Female
	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	
12	2	5.4	60.5	2.1	1950	212	0.88	-	-	-	-	-	-	-	2	3.4	60.5	2.1	1950	212	0.88	-
13	3	8.1	62.7	1.2	2000	265	0.81	5	22.7	56.8	5.1	1800	510	0.96	8	13.6	59.0	4.9	1875	423	0.90	63
14	8	21.6	58.8	5.4	1850	404	0.90	7	31.8	57.6	2.2	1829	588	0.96	15	25.4	58.2	4.1	1840	479	0.93	47
15	7	18.9	64.6	2.2	2329	170	0.87	2	9.1	58.5	0.7	1650	354	0.83	9	15.3	63.2	3.3	2178	356	0.86	22
16	6	16.2	64.2	6.1	2300	740	0.85	5	22.7	60.6	4.8	2340	365	1.08	11	18.6	62.6	5.6	2318	572	0.96	45
17	6	16.2	66.2	4.8	2483	355	0.87	1	4.5	57.0	-	1800	-	0.97	7	11.9	64.9	5.6	2386	414	0.89	14
18	3	8.1	62.0	3.0	2367	611	0.99	1	4.5	67.0	-	2600	-	0.87	4	6.8	63.5	3.5	2425	512	0.96	25
19	2	5.4	60.5	0.7	2200	141	0.99	1	4.5	60.0	-	2300	-	1.07	3	5.1	60.3	0.6	2233	116	1.02	33
Total	37							22							59							37
Mean			62.7	4.8	2195	459	0.89			58.7	4.1	1977	511	0.98			61.2	4.9	2114	487	0.92	
Mean Age		15.4							14.9							15.2						

Table 49. Test fishery results for Arctic charr from Opingivik Lake (Pangnirtung area), 12 April, 1978.

PRODUCTION	Quota	Harvest	CATCH-EFFORT	Total number of fish	Mesh Size(mm)	Net depth (meshes)	Hours set per 100(m)	CPE[1]	CPE[2]
	454.5 kg	334.6 kg		100	139	60	27.9	86.2	288.4

LENGTH-WEIGHT RELATIONSHIP $\log_{10} W = a + b (\log_{10} L)$

Sex	N	Y-intercept (a)	Slope (b)	95% C.I. of b
Male	39	-2.4779	3.3009	2.3338 - 4.2680
Female	61	-1.7074	2.8615	2.3274 - 3.3956
Total	100	-2.2380	3.1636	2.7974 - 3.5298

MORTALITY

Age-classes used	N	Survival (S)	S E of S	Annual Mortality Rate (A), where A = 1-S
16-20	27	0.64	0.06	0.36

[1]CPE = No. fish/100m/24 h.
[2]CPE = kg rd wt/100m/24 h.

Table 50. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by length interval for Arctic charr taken from Opingivik Lake (Pangnirtung area), 12 April, 1978.

Length Interval (cm)	Males							Females							Combined							% Female
	N	%	Length(cm) Mean	SD	Weight (g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight (g) Mean	SD	K	
40.0-44.9	-	-	-	-	-	-	-	1	1.6	44.1	-	1000	-	1.17	1	1.0	44.1	-	1000	-	1.17	-
45.0-49.9	-	-	-	-	-	-	-	2	3.3	47.8	-	1500	566	1.34	2	2.0	47.8	-	1500	566	1.35	-
50.0-54.9	-	-	-	-	-	-	-	5	8.2	52.5	-	1760	207	1.22	5	5.0	52.5	-	1760	207	1.22	-
55.0-59.9	-	-	-	-	-	-	-	15	24.6	57.9	-	2187	900	1.12	15	15.0	57.9	-	2187	900	1.12	-
60.0-64.9	6	15.4	62.8	-	3000	502	1.21	20	32.8	62.2	-	2670	374	1.11	26	26.0	62.3	-	2746	421	1.13	77
65.0-69.9	10	25.6	67.8	-	3980	834	1.27	12	19.7	66.6	-	3250	733	1.10	22	22.0	67.2	-	3582	847	1.18	55
70.0-74.9	14	35.9	72.3	-	4129	727	1.09	5	8.2	71.3	-	4360	956	1.21	19	19.0	72.1	-	4190	772	1.12	26
75.0-79.9	9	23.1	77.0	-	6344	1561	1.38	1	1.6	75.5	-	5000	-	1.16	10	10.0	76.9	-	6210	1532	1.36	10
Total	39							61							100							61
Mean			70.8	4.9	4428	1473	1.22			61.4	6.4	2702	1008	1.14			65.1	7.4	3375	1471	1.17	

Table 51. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by age group for Arctic charr taken from Opingivik Lake (Pangnirtung area), 12 April, 1973.

Age (yr)	Males							Females							Combined							% Female
	N	%	Length(cm) Mean	SD	Weight (g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	N	%	Length(cm) Mean	SD	Weight(g) Mean	SD	K	
12	-	-	-	-	-	-	-	2	6.1	51.4	10.3	1550	778	1.10	2	3.8	51.4	10.3	1550	778	1.10	-
13	-	-	-	-	-	-	-	8	24.2	58.5	5.9	2450	756	1.21	8	15.4	58.5	5.9	2450	756	1.21	-
14	-	-	-	-	-	-	-	5	15.2	59.9	8.6	2640	1071	1.16	5	9.6	59.9	8.6	2640	1071	1.16	-
15	4	21.1	67.4	4.1	3925	974	1.26	6	18.2	60.9	6.6	2950	1665	1.29	10	19.2	63.5	6.4	3340	1452	1.28	60
16	3	15.8	70.5	6.2	4067	723	1.17	4	12.1	58.7	8.6	2800	1675	1.30	7	13.5	63.7	9.5	3343	1427	1.24	57
17	4	21.1	72.9	1.4	4425	922	1.15	2	6.1	61.1	6.5	2500	1131	1.05	6	11.5	68.9	6.8	3783	1324	1.12	33
18	3	15.8	70.2	6.4	3967	757	1.15	3	9.1	64.4	4.9	2967	737	1.10	6	11.5	67.3	6.0	3467	864	1.12	50
19	2	10.5	61.1	0.1	2600	566	1.14	1	3.0	62.0	-	2300	-	0.97	3	5.8	61.4	0.6	2500	436	1.08	33
20	3	15.8	70.9	2.8	3833	577	1.09	2	6.1	65.8	11.0	3150	2051	1.01	5	9.6	68.8	8.5	3560	1165	1.06	40
Total	19							33							52							63
Mean			69.4	5.0	3905	855	1.17			60.0	7.1	2646	1151	1.18			63.4	7.8	3106	1210	1.18	
Mean Age		17.3							15.1							15.9						

Table 52. Test fishery results for Arctic charr from Robertson River (Pond Inlet area), 3 September, 1976.

PRODUCTION not available CATCH-EFFORT - not available Mesh Size (mm) 127

LENGTH-WEIGHT RELATIONSHIP $\log_{10} W = a + b (\log_{10} L)$

Sex	N	Y-intercept (a)	Slope (b)	95% C.I. of b
Male	15	-1.7550	2.8379	2.1443 - 3.5315
Female	12	-1.1525	2.5097	-0.0561 - 5.0755
Total	28	-1.6826	2.7951	2.1892 - 3.4010

MORTALITY insufficient data

Table 53. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by length interval for Arctic charr taken from Robertson River (Pond Inlet area), 3 September, 1976.

Length Interval (cm)	Males							Females							Combined							% Female
			Length(cm)		Weight(g)					Length(cm)		Weight(g)					Length(cm)		Weight(g)			
	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	
50.0-54.9	1	6.7	51.0	-	907	-	0.68	-	-	-	-	-	-	-	1	3.6	51.0	-	907	-	0.68	-
55.0-59.9	3	20.0	57.3	-	1815	196	0.96	-	-	-	-	-	-	-	3	10.7	57.3	-	1815	196	0.96	-
60.0-64.9	1	6.7	61.0	-	2268	-	1.00	-	-	-	-	-	-	-	1	3.6	61.0	-	2268	-	1.00	-
65.0-69.9	2	13.3	66.5	-	3119	882	1.06	4	33.3	68.1	-	3034	457	0.96	6	21.4	67.6	-	3062	532	0.99	67
70.0-74.9	1	6.7	70.0	-	3629	-	1.06	5	41.7	71.8	-	3039	503	0.82	7	25.0	71.4	-	3046	526	0.84	71
75.9-79.9	5	33.3	77.5	-	3924	884	0.84	3	25.0	77.0	-	4007	1202	0.87	8	28.6	77.3	-	3955	928	0.85	38
80.0-84.9	2	13.3	83.0	-	4536	642	0.79	-	-	-	-	-	-	-	2	7.1	83.0	-	4536	642	0.79	-
Total	15							12							28							43
Mean			69.4	10.7	3145	1271	0.90			71.9	3.5	3279	777	0.88			70.5	8.1	3179	1052	0.88	

Table 54. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by age group for Arctic charr taken from Robertson River (Pond Inlet area), 3 September, 1976.

Age (yr)	Males							Females							Combined							% Female
			Length(cm)		Weight (g)					Length(cm)		Weight(g)					Length(cm)		Weight(g)			
	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	
15	-	-	-	-	-	-	-	1	25.0	71.0	-	3175	-	0.89	1	8.3	71.0	-	3175	-	0.89	-
16	2	25.0	63.0	7.1	2835	1283	1.09	-	-	-	-	-	-	-	2	16.7	63.0	7.1	2835	1283	1.09	-
17	2	25.0	57.0	2.8	1758	240	0.95	-	-	-	-	-	-	-	2	16.7	57.0	2.8	1758	240	0.95	-
18	-	-	-	-	-	-	-	1	25.0	71.0	-	2495	-	0.70	1	8.3	71.0	-	2495	-	0.70	-
19	1	12.5	61.0	-	2268	-	1.00	1	25.0	67.5	-	2381	-	0.77	2	16.7	64.3	4.6	2325	80	0.89	50
20	2	25.0	64.8	19.5	2552	2326	0.78	-	-	-	-	-	-	-	2	16.7	64.8	19.5	2552	2326	0.78	-
21	1	12.5	83.0	-	4082	-	0.71	-	-	-	-	-	-	-	1	8.3	83.0	-	4082	-	0.71	-
30	-	-	-	-	-	-	-	1	25.0	74.0	-	3742	-	0.92	1	8.3	74.0	-	3742	-	0.92	-
Total	8							4							12							33
Mean			64.2	11.4	2580	1251	0.92			70.9	2.7	2948	635	0.82			66.4	9.8	2703	1067	0.88	
Mean Age		18.3							20.5							19.0						

Table 55. Test fishery results for Arctic charr from unnamed lakes along the Keel River (Pond Inlet area), 12-18 May, 1977.

PRODUCTION	Quota	Harvest	CATCH EFFORT	Total number of fish	Mesh Size(mm)	Net depth (meshes)	Hours set per 100 (n)	CPE[1]	CPE[2]
	Nil	285.8 kg		110	127	20	190.0	13.9	36.1

LENGTH-WEIGHT RELATIONSHIP $\log_{10} W = a + b (\log_{10} L)$

Sex	N	Y-intercept (a)	Slope (b)	95% C.I. of b
Male	61	-0.6635	2.2350	1.7005 - 2.7695
Female	39	2.0940	0.6932	0.0272 - 1.3592
Total	100	-0.4653	2.1219	1.7624 - 2.4814

MORTALITY

Age-classes used	N	Survival (S)	S E of S	Annual Mortality Rate (A), where A = 1-S
18-22	34	0.59	0.05	0.41

[1]CPE = No. fish/100 m/24 h.
[2]CPE = kg rd wt/100 m/24 h.

Table 56. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by length interval for Arctic charr taken from unnamed lakes along the Keel River (Pond Inlet area), 12-18 May, 1977.

Length Interval (cm)	Males							Females							Combined							% Female
			Length(cm)		Weight(g)					Length(cm)		Weight(g)					Length(cm)		Weight(g)			
	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	
55.0-59.9	1	1.6	58.0	-	2700	-	1.38	5	12.8	58.7	-	2020	45	1.00	6	6.0	58.6	-	2133	281	1.06	83
60.0-64.9	7	11.5	63.5	-	2229	236	0.87	19	48.7	62.3	-	2140	205	0.89	26	26.0	62.6	-	2164	212	0.88	73
65.0-69.9	26	42.6	67.3	-	2581	194	0.86	14	35.9	66.0	-	2407	243	0.84	40	40.0	66.8	-	2520	226	0.85	35
70.0-74.9	23	37.7	72.1	-	3191	404	0.85	-	-	-	-	-	-	-	23	23.0	72.1	-	3191	404	0.85	-
75.0-79.9	4	6.6	76.5	-	3625	704	0.81	1	2.6	75.0	-	2000	-	0.47	5	5.0	76.2	-	3300	949	0.75	20
																						39
Total	61							39							100							
Mean			69.1	4.0	2841	517	0.86			63.5	3.3	2217	251	0.88			66.9	4.6	2598	529	0.86	

Table 57. Number, percent, mean fork length, mean weight, condition factor (K) and sex ratio by age group for Arctic charr taken from unnamed lakes along the Keel River (Pond Inlet area), 12-18 May, 1977.

Age (yr)	Males							Females							Combined							% Female
			Length(cm)		Weight (g)					Length(cm)		Weight(g)					Length(cm)		Weight(g)			
	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	N	%	Mean	SD	Mean	SD	K	
12	2	4.9	67.3	2.5	2500	-	0.83	-	-	-	-	-	-	-	2	3.4	67.3	2.5	2500	-	0.83	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	4	9.8	62.6	3.3	2475	330	1.03	1	5.6	63.0	-	2000	-	0.80	5	8.5	62.7	2.8	2380	356	0.98	20
16	3	7.3	70.3	2.9	3000	458	0.86	2	11.1	62.0	4.2	2250	354	0.94	5	8.5	67.0	5.4	2700	552	0.89	40
17	7	17.1	67.4	2.3	2629	345	0.85	6	33.3	63.3	3.1	2267	225	0.90	13	22.0	65.5	3.3	2462	340	0.87	46
18	5	12.2	70.6	3.2	2900	485	0.82	3	16.7	64.0	1.3	2167	153	0.83	8	13.6	68.1	4.3	2625	534	0.82	38
19	9	22.0	70.2	4.9	2911	567	0.85	2	11.1	63.0	-	2050	71	0.82	11	18.6	68.9	5.3	2755	615	0.84	18
20	7	17.1	69.2	4.1	2671	482	0.80	3	16.7	63.8	5.1	2333	306	0.90	10	17.0	67.6	4.9	2570	450	0.83	30
21	3	7.3	72.5	0.5	3300	100	0.87	-	-	-	-	-	-	-	3	5.1	72.5	0.5	3300	100	0.87	-
22	1	2.4	76.5	-	3800	-	0.85	1	5.6	65.0	-	3000	-	1.09	2	3.4	70.8	8.1	3400	566	0.97	50
																						31
Total	41							18							59							
Mean			69.1	4.3	2815	483	0.86			63.4	2.8	2261	283	0.89			67.3	4.7	2646	501	0.87	
Mean Age		18.0							17.9							18.0						

Table 58. Results of the test fishery for Arctic charr from an unnamed lake on Devon Island (Resolute Bay area), 1 September, 1977.

PRODUCTION — not available

CATCH-EFFORT - not available — MESH SIZE (mm) 101

LENGTH-WEIGHT RELATIONSHIP $\log_{10} W = a + b (\log_{10} L)$

Sex	N	Y-intercept (a)	Slope (b)	95% C.I. of b
Total	78	-2.1372	3.0752	2.7629 - 3.3875

MORTALITY — insufficient data

Table 59. Length composition of Arctic charr from the test fishery at an unnamed lake on Devon Island (Resolute Bay area), 1 September, 1977.

Length Interval (cm)	N	%	Length (cm) Mean	Length (cm) SD	Dressed Weight(g)[a] Mean	Dressed Weight(g)[a] SD
50.0-54.9	3	3.8	52.8	-	1533	58
55.0-59.9	19	24.4	57.6	-	1841	223
60.0-64.9	33	42.3	61.6	-	2340	231
65.0-69.9	14	17.9	66.9	-	3054	390
70.0-74.9	7	9.0	70.8	-	3771	614
75.0-79.9	2	2.6	76.0	-	4175	530
Total	78					
Mean			62.4	5.1	2491	723

[a]Fish examined in dressed form therefore data by sex not available.

Table 60. Age composition of Arctic charr from the test fishery at an unnamed lake on Devon Island (Resolute Bay area), 1 September, 1977.

Age (yr)	N	%	Length (cm) Mean	Length (cm) SD	Dressed Weight(g)[a] Mean	Dressed Weight(g)[a] SD
15	2	3.7	60.8	1.1	2400	141
16	1	1.9	54.5	-	1500	-
17	4	7.4	57.0	2.6	2013	504
18	9	16.7	59.3	4.6	2211	444
19	3	5.6	61.3	3.8	2217	404
20	5	9.3	60.8	3.4	2140	201
21	8	14.8	63.0	3.8	2369	674
22	14	25.9	64.4	4.9	2818	862
23	6	11.1	66.7	8.4	2958	1098
24	2	3.7	68.5	2.1	3325	318
Total	54					
Mean			62.4	5.4	2489	747
Mean Age		20.3				

[a]Fish examined in dressed form therefore data by sex not available.

APPENDIX 1

TEST FISHERY - PROCEDURE

1. Community Group:

   e.g. Hunters and Trappers Association identifies a body of water they are interested in fishing to the local GNWT Wildlife Officer.

2. GNWT Wildlife Officer:

   Discusses the possibility of a test fishery with the community group and identifies potential problems such as conflict with other communities or uses groups (sport fishing lodge, domestic fishing etc.). When satisfied there is a need, officer submits a Test Fishery Request form to Wildlife Service, Yellowknife, then forwarded to Department of Fisheries and Oceans, District Office, P.O. Box 2310, Yellowknife, N.W.T. X0E 1H0.

3. D.F.O. District Office, Yellowknife:

   Forwards the request to Head, Fish and Marine Mammal Management, D.F.O. Winnipeg.

4. Head, Fish and Marine Mammal Management, F&MS Winnipeg:

   Head, Fish and Marine Mammal Management reviews request and forwards to Fishery Management Biologist responsible for that specific area.

5. Fishery Management Biologist, F&MS Winnipeg:

   Reviews request and checks for previous background data on system.

   (a) Prepares a permit with a test quota and forwards it directly to GNWT Wildlife Officer.

   OR

   (b) Denies request if a test fishery has been conducted on this system and sufficient information has been gathered to indicate the fishery is not feasible or a resource - use conflict exists. At this point discussion with all concerned groups is to be initiated by the Fishery Management Biologist.

   If (a), copies of Test Fishery Permit go to:

   (i) GNWT Wildlife Officer - original
   (ii) R.B. Tinling, Supervisor
   Resource Development
   Wildlife Service
   Dept. of Renewable Resources
   Yellowknife, N.W.T. - 1 copy
   (iii) Fishery Management Biologist - 1 copy
   (iv) Head, Fish and Marine Mammal Management - 1 copy
   (v) Secretary Fish Resources - 2 copies
   (vi) Room 3-58 for filing - 1 copy
   (vii) District Office, DFO, Yellowknife - 1 copy

   A total of 7 copies are made.

cont'd

6. GNWT Wildlife Officer:

   Receives Permit and supervises Test Fishery with the help of the community group. Collects biological samples and catch-effort data. At finish of Test Fishery, Wildlife Officer submits results directly to Fishery Management Biologist, F&MS Winnipeg.

7. Fishery Management Biologist:

   Receives results, analyzes data and returns results to GNWT Wildlife Officer with a recommendation to either:

   (a) Proceed with the establishment of a commercial fishery with a provisional quota to be submitted for Schedule V of the NWT Fishery Regulations.

   OR

   (b) Repeat the Test Fishery the next year as more data are needed.

APPENDIX 2

Department of Fisheries and Oceans

Fish and Marine Mammal Management

Freshwater Institute

Winnipeg, Manitoba

NORTHWEST TERRITORIES TEST FISHERY INSTRUCTIONS
(Revised April 1980)

These instructions contain:

A. NORTHWEST TERRITORIES TEST FISHING REQUIREMENTS (1 copy, 8 pp.)

B. TEST FISHERY DATA SHEET - CATCH AND EFFORT (DAILY RECORD) (1 copy)

C. SAMPLE RECORD SHEET (1 copy)

D. TEST FISHERY - QUESTIONNAIRE (1 copy)

E. TEST FISHERY REQUEST FORM (1 copy for following year)

cont'd

NORTHWEST TERRITORIES TEST FISHING REQUIREMENTS

Before new fisheries are established, some prior assessment of the fish population must be made. Criteria essential to this task include determining species composition, catch per unit of effort, age composition, growth rate, sex ratio and maturity. It is only after this information has been collected and analysed that quotas, based on biological facts, may be allocated.

It is the objective of the Fish and Marine Mammal Management Division, to manage the fish resources of the Northwest Territories on a sustained yield basis. In this regard it is in the best interest of both fishermen and Government that adequate information be obtained through test fishing. Therefore, if at all possible, in future test fishing will be done before quotas are allocated for previously unfished water bodies in the Northwest Territories. Test fishing may be done by the Fish and Marine Mammal Management Division, or upon request by other interested parties authorized by this Division. The following are procedures which must be followed and forms which must be filled out to ensure that test fisheries are conducted in a meaningful and standard manner.

1. TEST FISHERY REQUEST

Before a test fishery may be carried out the TEST FISHERY REQUEST FORM (sample attached) must be filled out and sent to:

Head, Fish and Marine Mammal Management Division
Fisheries Resources Section
501 University Crescent
Winnipeg, Manitoba R3T 2N6

through the office of the District Manager, Department of Fisheries and Oceans, P.O. Box 2310, Yellowknife, N.W.T. X0E 1H0.

The information required must include the Correct Coordinates of the water body involved. These can be found in the gazetteer of Canada, or from topographical maps. If possible; a photocopy or tracing of the area with the location noted should be included. This will save much trouble in locating the areas involved. A request will not be granted unless the water body can be identified. The onus for correct coordinate identification is on the requestor.

Test fisheries should be requested before April 1 of each year and must be carried out before March 31 of the following year, otherwise a new request is required. Written permission must be received from the Fish and Marine Mammal Division before a test fishery may be conducted.

cont'd

2. METHODOLOGY

Collection methods will depend on the type of water body to be investigated. (eg. lake, stream, inlet) and the request should state how the test is to be done; it is assumed that gill nets will be used in most cases; however, if not, the sampling gear is to be specified.

Each request will be viewed on its merit and in some instances the Fish and Marine Mammal Management Division may supply sampling gear in order to obtain the necessary data.

Sample size is extremely important and can vary depending on the availability of fish. When fish are abundant, at least 100 fish of the species sought after must be sampled. All other incidental fish species must be identified, counted and also sampled if possible. In the case of fish of unknown species, a sample is to be forwarded to the Head, Fish and Marine Mammal Management Division (address above). These should be either frozen or preserved in formalin or ethyl-alcohol.

3. TEST FISHERY DATA SHEET - CATCH AND EFFORT (DAILY RECORD)
(see enclosed copy)

The data sheet is designed to be filled out in the field by the collector. A separate sheet is necessary for each day fished. The information required is as follows:

DATE:	Record day, month and year. ie: 10/2/78
LAKE OR STREAM:	Circle type of water body and record given name. If no given name record as "unnamed".
CO-ORDINATES:	Latitude and longitude from topographical maps or Gazetteer of Canada.
RECORDER:	Here write the name of the person collecting the data. If more than one, record who is in charge.
SAMPLER:	Here write the name of the person directly handling data. If more than one, record who is in charge.
FISHERY FOR:	Note the name of the primary species sought.
SPECIES:	Note the common name such as whitefish, lake trout, etc., of all species caught. Note if Arctic char are landlocked or sea-run.
NUMBER CAUGHT:	Record the number of fish of each species caught that day.
TOTAL WEIGHT:	Record total poundage of each species caught that day.

cont'd

NO. OF GILLNETS LIFTED: The number of gillnets lifted that day.

LENGTH OF EACH NET (yds): Length of each gill net in yards.

MESH SIZE: Stretched measure (knot to knot) in inches, of individual meshes.

NET DEPTH: Number of meshes from float to lead line of gill net.

TWINE TYPE: Nylon, monofilament, cotton, etc. and weave. ie. 210/8, 210/3, etc.

DEPTH OF WATER: Depth of water in feet in which the net is set. If net is set from shore, note 0 to maximum depth.

SET: Circle whether it is a surface or botton set.

HOURS FISHED: Duration in hours from setting to pulling net.

NOTE: Make as many copies of the TEST FISHERY DATA SHEET - CATCH EFFORT from the original supplied as you require in the field.

SAMPLING FISH

The next step deals with measurements obtained from sampling individual fish. The usual procedure for this involves:

a) first recording information from individual fish on scale envelopes.

b) then transferring this information to the SAMPLE RECORD SHEET when the sampling is complete. This can be done later on shore.

It is essential that at least 100 fish of the dominant or commercially important species be sampled. All other minor or non-commercially important species should also be counted and sampled if time or conditions permit.

Information to be recorded on each scale envelope is as follows, (space is not provided on the standard envelopes for some information listed here. If you record this information, use the back of the envelopes):

SAMPLE NO.: A different number must be assigned to each fish in series, e.g. 1,2,3...This number is necessary for later reference. The number should run in sequence for the duration of the test fishery (ie. don't repeat sample numbers for each day).

DATE: Date of Sampling.

cont'd

LAKE: Name of lake or stream as the case may be.

LOCATION: Where on lake or stream collection took place.

SPECIES: Common name.

ANGLING OR NET: Check one.

MESH SIZE: As mentioned earlier.

WEIGHT: Usually measured in grams. Note units. Also note if weight is round, dressed head on, or dressed head off. Normally round weight should be taken.

FORK LENGTH: This is the length in millimeters (mm) from the tip of the snout to the shortest ray at the fork of the caudal fin (tail). (Figure 1.)

SEX AND MATURITY: The sex and maturity code is combined. It can be found in the upper right hand corner of the SAMPLE RECORD SHEET. Recording the number is sufficient. The code reads as follows:

Unknown = 0

Immature female	= 1	Immature male	= 6
Maturing female	= 2	Maturing male	= 7
Mature female	= 3	Mature male	= 8
Ripe female	= 4	Ripe male	= 9
Spent female	= 5	Spent male	= 10

Explanation of stages:

Unknown - 0 Not known whether sex is male or female.

Immature female - 1 Ovaries small narrow, elongate. Little evidence of eggs.

Maturing female - 2 Ovaries developing, individual eggs small but identifiable.

Mature female - 3 Ovaries well developed, filling body cavity but eggs cannot be released with application of pressure to abdomen.

Ripe female - 4 Body cavity filled with eggs which can be extruded with application of pressure to abdomen. (running eggs)

Spent female - 5 Ovaries slack. Presence of some residual eggs in body cavity.

cont'd

Immature male - 6 Testes small, clear and thread like.

Maturing male - 7 Testes enlarging, pinkish or flesh coloured.

Mature male - 8 Testes large, white, wavy with fine conspicuous blood vessels. No milt runs when pressure is applied.

Ripe male - 9 Testes white, distended and drops of sperm can be extruded with application of pressure.

Spent male - 10 Testes white, somewhat slack. Little if any sperm extruded with application of pressure.

The explanations for various maturity stages are general, and are intended to be applied to a variety of species. In the final analysis your judgement is necessary.

NOTE: If you feel you do not have time to record sex and maturity using the above guidelines, just record sex as Male - M, Female - F, and Unknown - U.

STOMACH CODE: When checking sex note if the stomach has anything in it and record contents as:

Empty = MT
Insects = I
Bottom dwelling organisms = B
Fish remains = FR

NOTE: If you feel you have insufficient time to record this data, omit this procedure.

FISH FORM: Record if fish was whole (round) or dressed (head on) sampled. Record as:

Round = Rd.
Dressed (Head on) = Dr.
Dressed (Head off) = Hdl.

REMARKS: Note any pecularities such as deformities, parasites, damaged tail or running eggs and sperm, etc.

AGE: Age determinations will be carried out at a later date using scales and/or otoliths depending on the species. This is important as scales for instance can be totally useless for aging purposes for some species. (eg. Arctic char, lake trout) and would be a waste of time to collect. The same could be true of otoliths depending on the species.

(Note which are taken). If scale samples are to be taken, these should be collected on the left side of the fish from the regions shown in Figure 1 for various species. These should be put on a piece of paper and placed in a scale envelope. Ten to twenty scales are required from each fish. Scales may be

cont'd

taken using tweezers or a knife. It is extremely important to wipe the instrument clean after each fish is scale sampled. Mucous or slime should be removed from the scales before placing them in an envelope. It is important not to include scales in the wrong envelope.

Scales are usually taken from all species except lake trout and Arctic char. From lake trout and Arctic char otoliths (ear bones) are required. However, as stated above, the item to be collected will be noted upon approval of the request. Otoliths may be detected as hard white objects (Figure 2) lying beneath the brain and under the backbone on both sides of the head. They are enclosed in clear, fluid filled capsules. They must be removed from this capsule and cleaned (usually by rubbing between the finger) before placing them on a piece of paper which is folded and inserted in a scale envelope. Do not use paper towels or tissue paper. Non-porous paper such as writing paper will do.

Otoliths may be removed by several methods. Use the one you find the best. Two of the more common methods are as follows:

a) Make a medial incision along the top of the head, running from the back of the head to the tip of the snout and split the head in two. The otoliths will be located beneath the brain in pockets on both sides of the head (Figure 2a).

b) Bend the head back and remove the gills (Figure 2b). Count back one vertebra (from the front of the mouth); cut almost through it; snap the backbone. The otoliths should be visible as prominent white objects in clear capsules on either side of the head under the backbone. Both otoliths must be wiped clean before placing them in the scale envelope.

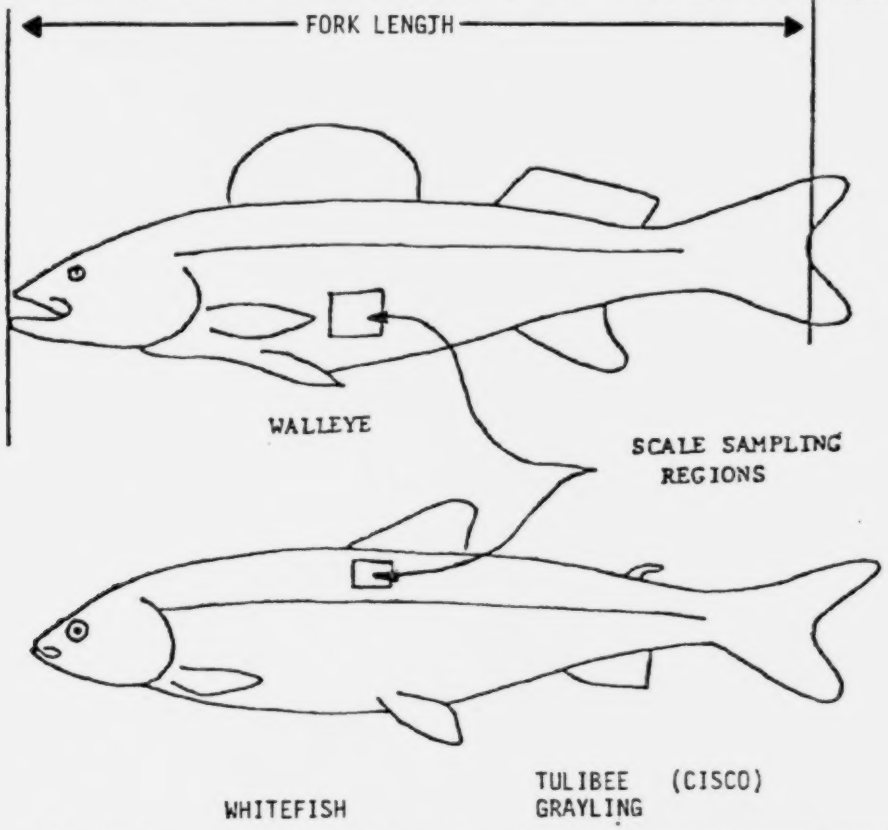


Figure 1. Regions on major fish species where scale samples must be taken.

cont'd

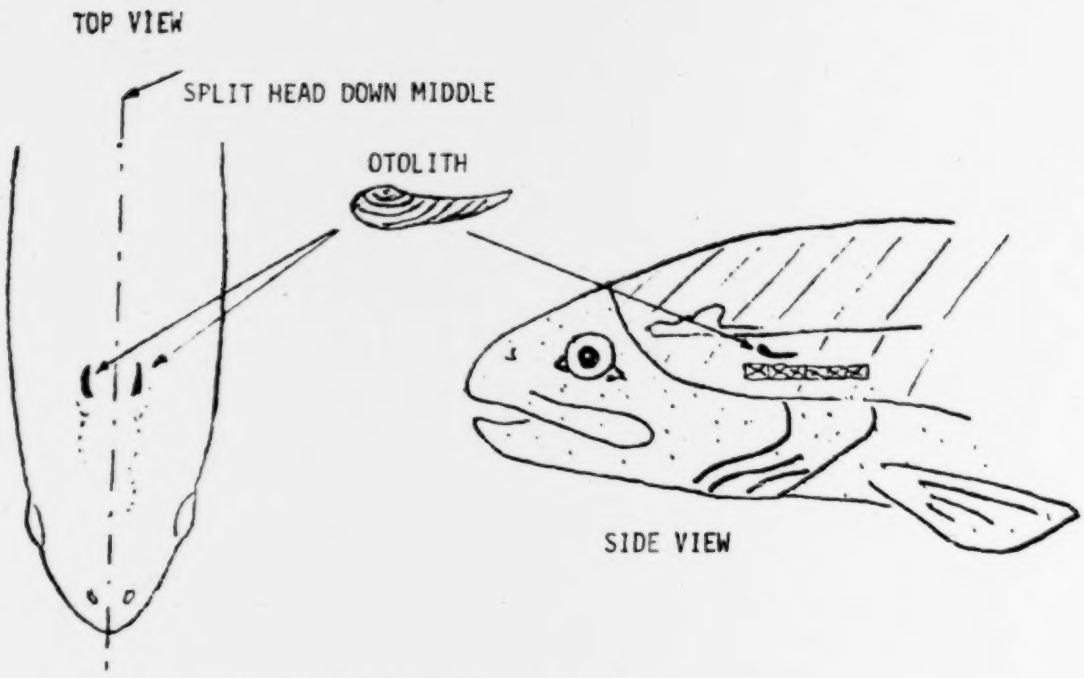
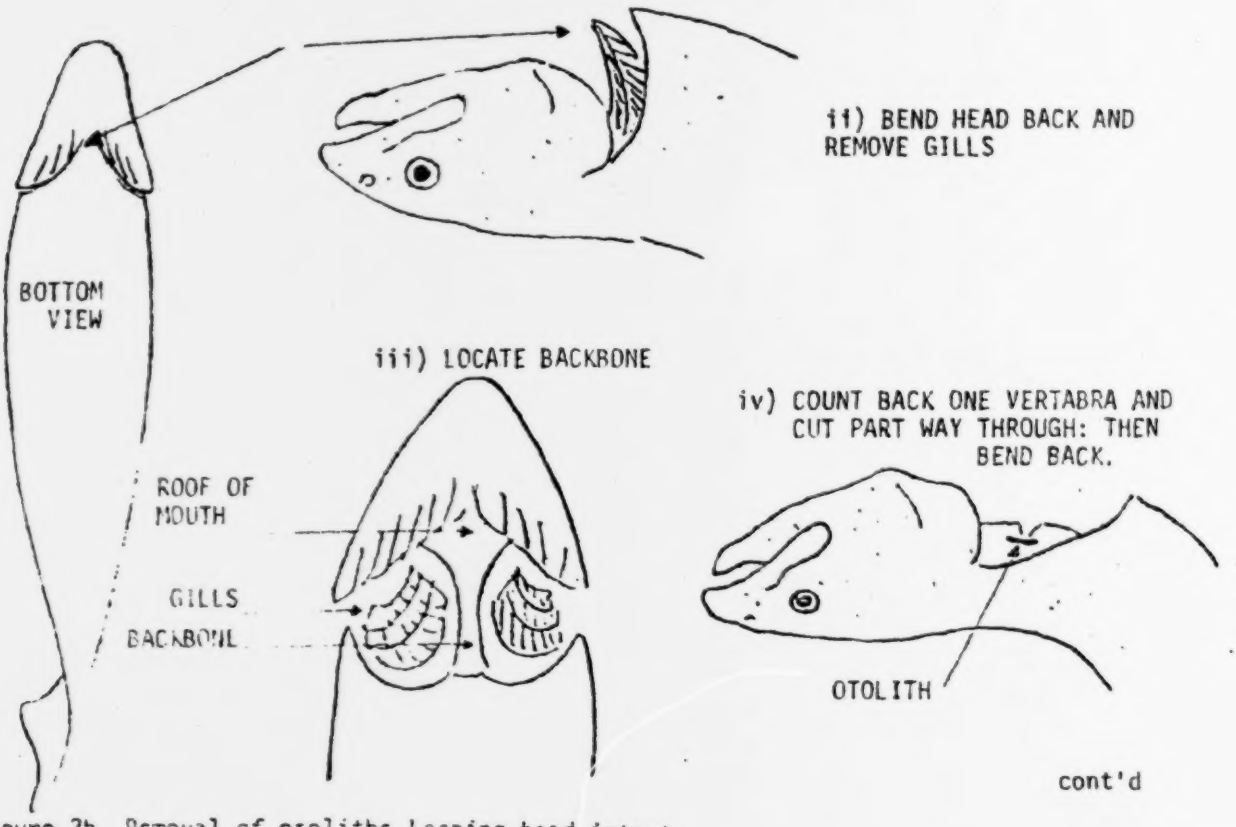


Figure 2a. Removal of otoliths by splitting head.


i) CUT ISTHMUS
NOTE: Do not cut isthmus if fish are to be hung and frozen. Work through gill openings instead.
ii) BEND HEAD BACK AND REMOVE GILLS
BOTTOM VIEW
iii) LOCATE BACKBONE
ROOF OF MOUTH
GILLS
BACKBONE
iv) COUNT BACK ONE VERTABRA AND CUT PART WAY THROUGH: THEN BEND BACK.
OTOLITH

cont'd

Figure 2b. Removal of otoliths keeping head intact.

4. SAMPLE RECORD SHEET (see enclosed copy)

Use a separate sample record sheet for each species sampled and for each mesh size. All the information required for these sheets is on the scale envelopes. Fill in:

DATE LAKE OR STREAM SPECIES FISHERY MESH SIZE GEAR	as per scale envelopes
CODE	- leave blank
CODE NO.	- leave blank
SAMPLE NUMBER FORK LENGTH WEIGHT	as per scale envelopes
AGE	- leave blank
SEX	- leave blank if you use maturity codes, otherwise use M, F or U as required
MATURITY	- use if codes are employed, otherwise leave blank

5. No later than two months after completion of the test fishery send copies of all TEST FISHERY DATA SHEETS - CATCH AND EFFORT, all SAMPLE RECORD SHEETS as well as scale/otolith envelopes and the completed QUESTIONNAIRE to:

Head, Fish and Marine Mammal Management Division
Fisheries Resources Section
501 University Crescent,
Winnipeg, Manitoba R3T 2N6

In response, we will send you an evaluation of the test fishery within 12 months of receipt of your data.

This outline does not cover all aspects of lake and stream assessment. In many cases, further information on the lake or river itself, as well as the fish populations, will be required. This will be noted where applicable on individual requests. However, by following the above procedures, the data collected by observers in different parts of the north will be comparative and serve as a good basis for approaching certain types of fisheries problems.

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NOTICE TO WILDLIFE OFFICERS

After having read these instructions you may come to the conclusion that some of the data requests are too difficult to comply with under certain field conditions. We are aware that at times local fishermen under your supervision, will be doing the fishing and they may not be interested in filling out numerous forms. Therefore, use your discretion in providing all the detailed data. However, it is essential that you provide data for:

1. catch and effort and
2. biological samples from the catch

These data are most valuable in assessing the potential for a commercial fishery. Any extra data you can provide as per the Test Fishery Instructions will be greatly appreciated.

To gather catch and effort data, the person(2) doing the fishing may keep a log book indicating the number of hours fished, the number of nets lifted, length of each net, total catch by species, number and weight, mesh size and location of set. Based on this you can fill out the CATCH AND EFFORT DATA SHEETS at a later date.

Biological sampling is best when done immediately after fish are captured. However, circumstances such as weather etc. may prevent sampling until later. In such cases these fish samples should be frozen and sampled at the first opportunity.

cont'd

B

Department of Fisheries and Oceans
Fish and Marine Mammal Management Division

TEST FISHERY DATA SHEET - CATCH AND EFFORT (DAILY RECORD)

Date: _____ Lake or Stream: _____

Co-ordinates: _____

Recorder: _____ Sampler: _____

Fishery for: _____

Species	No. Caught	Total Round Weight

Gear:

No. of gillnets lifted: _____ Mesh Size (in.): _____

Length of each net (yd.): _____ Net Depth (meshes): _____

Twine type: _____

Set:

Surface/bottom
Depth of water: _____ Hours fished: _____

If you use various mesh sizes in the fishery, fill in one of these sheets for each different mesh size used that day. If you use nets of different lengths record in "Length of each net:" 3 x 100 yds, 2 x 90 yds, 4 x 50 yds, etc. This example shows a total of 9 nets with a total yardage of 680 yards. If mesh depth varies record in "Length of each net", 3 x 100 yds x 40 meshes, 2 x 90 yds x 30 meshes, etc.

cont'd

Environment Canada Environnement Canada
Fisheries and Marine Pêches et Mer

C RESOURCE MANAGEMENT BRANCH
FISHERY MANAGEMENT DIVISION

SAMPLE RECORD SHEET

Date

Division Code

Lake or Stream — Code

Species — Code — Fishery — Code

Mesh Size — Gear — Code

FQ2 / MO1

UNKNOWN — 0
1 — IMMATURE — 6
2 — MATURING — 7
3 — MATURE — 8
4 — RIPE — 9
5 — SPENT — 10

CODE NO.	NUMBER	SAMPLE NUMBER	FORK LENGTH (MM)	WEIGHT (G)	AGE	SEX	MATURITY	CYST. COUNT	PHYSICAL CONDITION	STOMACH CODE	FISH FORM	REMARKS
	1											
	2											
	3											
	4											
	5											
	6											
	7											
	8											
	9											
	10											
	11											
	12											
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	25											
	26											
	27											
	28											
	29											
	30											

RECORDER

SAMPLER

081-4-4503 (02/76)

cont'd

D

Department of Fisheries and Oceans
Fish and Marine Mammal Management Division

TEST FISHERY - QUESTIONNAIRE

1. Lake or stream (name): _____

2. Co-ordinates: _____

3. Acreage: _____

4. Species of Interest: _____

5. Total poundage taken by test fishery (round weight): _____

6. Based on results of the test fishery you conducted do you feel this body of water can support a sustained annual commercial fishery for the species of interest? _____ Suggested quota (pounds rd. wt.): _____

7. Do you believe it requires another year of test fishing for a better evaluation? _____

8. Is there sufficient interest amongst the local residents to supply the work force necessary for a sustained commercial fishery? _____

9. What is the market for the potential commercial harvest? _____

_____

_____

10. What agency will be responsible for handling the commercial catch: (ie. processing and vending)? _____

_____

_____

11. Is there currently a domestic harvest of the species of interest? _____
If so approximate harvest is _____ pounds, round weight.

12. Is there currently a sport harvest for the species of interest? _____
If so approximate annual harvest is _____ pounds, round weight.
Name of lodge (s) if present is (are):

_____

_____

Cont'd

13. Would there be a conflict between commercial, domestic and sport fisheries? _____

14. Are there any particular problems such as shortage of labour, lack of processing and storage facilities, transportation difficulties, etc. this fishery would encounter if established? _____

_____

_____

15. Additional comments: _____

_____

_____

_____

_____

cont'd

E

TEST FISHERY REQUEST - 19

LOCATION _____

LATITUDE _____ LONGITUDE _____

SPECIES OF INTEREST _____
(If Arctic char specify landlocked or sea-run)

OTHER SPECIES BELIEVED PRESENT _____

PURPOSE OF TEST FISHERY _____

_____

_____

_____

NAME OF PERSON IN CHARGE OF PROJECT _____

STARTING DATE OF PROJECT _____

FINISHING DATE OF PROJECT _____

FISHING METHOD (i.e. gill net, mesh size) _____

QUANTITY OF FISH ANTICIPATE TO TAKE (pounds, round weight) _____

HOW WILL FISH BE DISPOSED OF? _____

_____

ARE THERE ANY OBJECTIONS TO A TEST FISHERY IN THIS LOCATION BY:

a. The Settlement Council? _____

b. Hunters and Trappers Association? _____

c. Domestic fishing interests? _____

d. Sport fishing interests? _____

DO YOU REQUIRE STATIONERY SUCH AS SCALE ENVELOPES? _____IF YES, APPROXIMATELY HOW MANY? _____

ADDITIONAL COMMENTS: _____

_____

_____

_____